Maritime Museum of San Diego

Mains'l Haul

Vol. 44: 1 & 2 Winter/Spring 2008

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A Journal of Pacific Maritime History

The Last Days of Fishing







Artist and author Ed Ries captures the heart and soul of the fishing experience in his paintings. The painting above is captioned: *Trollers and bait boats fish for albacore in the Catalina Channel,* **c. 1917. Below: Joe De Santi's** *La Diana* **was the boat model for the** *Rock Codder*



Front Cover: Photo upper left: MMSD Collections, P-11363c. Photo upper right: Courtesy Ed Ries Collection
Photo center: Joe De Santi heads out on *La Diana* **for their** *Last Day of Fishing,* **photographed by Ted Walton, 2004.**
View over Isla Cedros township seaward, with cross commemorating fishermen lost at sea, photograph by Fabio Martinez.

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MAINSAIL HAUL—An order in tacking ship bidding, "Swing the main yards."

Maritime Museum of San Diego

MAINS'L HAUL

Vol. 44: 1 & 2 Winter/Spring 2008

A Journal of Pacific Maritime History

The Last Days of Fishing

2 
Ray Ashley
From the Helm

4 
Neva Sullaway
Acknowledgements

6 **Vito Sardo**
San Diego's 1928 Pioneer Fishermen


8 
Julius H. Zolezzi and Lawrence D. Bradley, Jr.
The End of the Line

28 

August J. Felando
Tuna Clippers & World War II

46 
San Diego Fisheries Timelime

48 
Fabio Martinez
A Cannery At Cedros Island

62 
Otto and Russell Kiessig
The Story of Frank G. Kiessig (1881-1939)

70 
Maggie Piatt Walton
Tony Giacalone and Joe De Santi Remembered

80 
Sarah M. Shoffler, Meghan Donahue, and Sarah Mesnick, Ph.D.
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FROM THE HELM

by Ray Ashley, Ph.D.
President and CEO,
Maritime Museum of San Diego

Trying to imagine San Diego without a history or folklore of fishing is like trying to imagine Nantucket without a history or folklore of whaling, except that no living person can now remember hearing Nantucket's stories first-hand.

Not only has San Diego been the home port to several major fisheries, but the support of those fisheries was, until the very recent past, a mainstay of San Diego's economy. In some cases, San Diego was the center of gravity for an entire fishery and, with sportfishing at least, San Diego still remains a world center. Though most of the articles and images in this issue of *Mains'l Haul* focus on the fishermen, their heritage, fishing techniques and innovations; the economic and social effects naturally went far beyond the activities of fishermen at sea. Shipbuilding, ship maintenance and repair; providing equipment and supplies ranging from refrigeration to power plants, canneries, transportation and distribution networks; labor, law, international relations, fisheries management, and oceanographic research provided occupational pathways for generations of San Diegans.

They came from the far corners of the earth,

Courtesy San Diego Historical Society Photograph Archives

Neptune Seafood Co., c. *1927*



including China, Japan, Italy, Portugal, the Azores, and Central Europe, in pursuit of fish. Often immigrant fishermen and their descendants were also boatbuilders, technological innovators, and business owners with diversified interests. When it became necessary, some of them went to war along with their boats, and some of those who did never made it home. Wives and children worked in the canneries or boatyards, attended the launchings of new boats, and waited for the boats at sea to return. By such means San Diegans built prosperous lives and a prosperous community, enriching it by their culture, their stories, and their hard work.

Today there are ever more San Diegans who go to seafood restaurants, or open cans of tuna, or buy fillets in shrink-wrapped Styrofoam trays from the supermarket coolers, but seldom do we pause to wonder how these products got there or what human stories and histories are bound up in what we are about to consume. Nor do we often reflect that human hunting-gathering societies existed for 40,000 years, until, one by one, all the hunting grounds disappeared save the last, greatest, and most dangerous of all, the sea. Perhaps the story of that hunting ground too may be drawing to a close, and one day San Diego's fishing heritage, like Nantucket's, will become entirely a constructed and packaged memory rather than the stuff of personal recollection.

Until that time, we are pleased and honored to be able to bring you a few such living memories, fresh from the sea.



West Gate Cannery, c. *1924*

Acknowledgements

It has been some time since *Mains'l Haul* has revisited the subject of the history of San Diego's fisheries, and we are fortunate to have Museum members August Felando and Ed Ries expand on their earlier research.[1] Vito Sardo proffered the 5-panel 1928 portrait of the "Pioneer Fishermen" (pgs 6 & 7), into which research still continues in an effort to identify some of the people who are pictured. Likewise, August Felando continues his research into the fishing vessels that were requisitioned during World War II. His work has been memorialized in the **Tuna Fleet Service World War II Memorial**, newly exhibited at Tuna Lane, along San Diego's waterfront. A debt of gratitude also goes to Museum member, Julius Zolezzi, who has generously donated over two hundred historic photographs, which were left behind when the American Tunaboat Association closed their doors.

Maritime Museum workers Maggie Piatt Walton and Bob Wright must be credited with preserving and safekeeping our living history through their hours spent recording oral histories. In addition, Maggie's photographs capture moments that we can only revisit through her artistry. We would also like to thank the De Santi and Giacalone families for sharing their histories with us, both in conversation and through their families' photographs.

Previous contributor, professor, researcher and skilled photographer, Fabio Martinez once again shares his passion for photography and the history of Baja California, creating a vignette into the lives of one family who built a cannery at a most rugged outpost on Cedros Island, in Baja California Sur.

Thanks also to the team at NOAA/National Marine Fisheries Service/ Southwest Fisheries Science Center for presenting their overview of current efforts to preserve, protect and manage our most precious living marine resources.

And, of course, thanks again to Gordon Sheldon, our intrepid assistant librarian, who continues to unscramble the mysteries inherent in our research.

With Gratitude, Neva Sullaway, editor

1 **Earlier issues of *Mains'l Haul*** featuring articles with an in depth look at the history of the San Diego Fisheries are: Vol. 29:3; Vol. 32:4; Vol. 33:1; Vol. 33:3; and Vol. 38:4/39:1.

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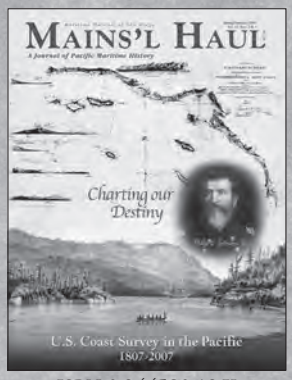
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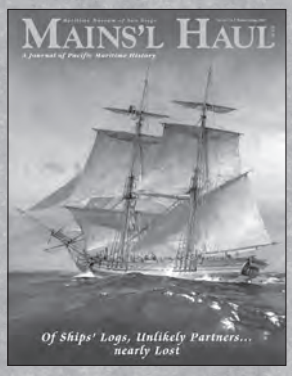
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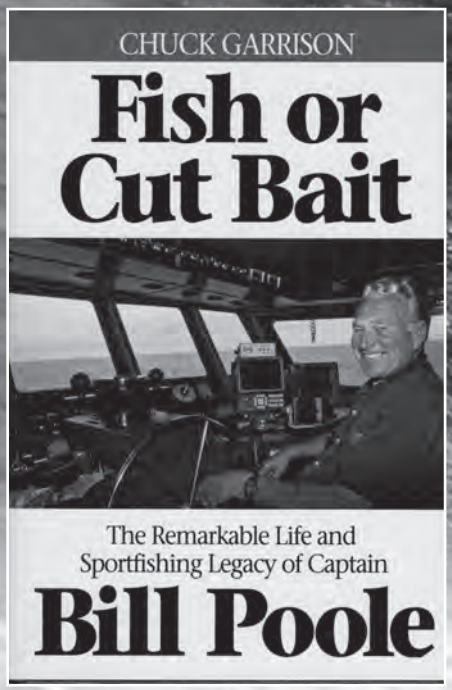
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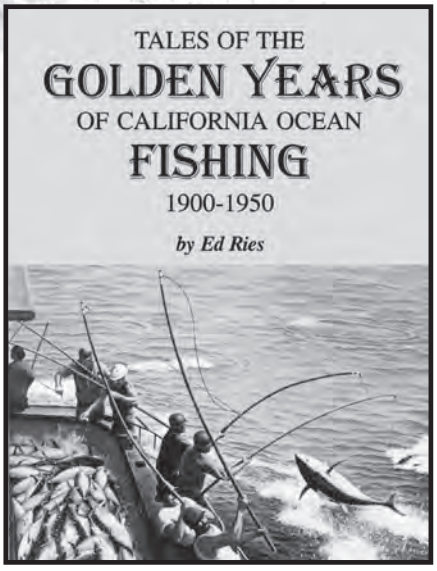
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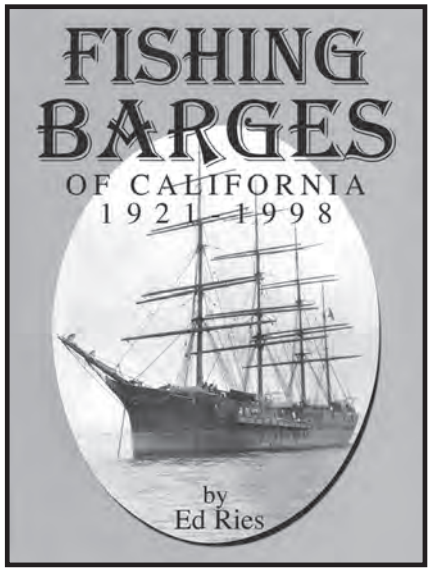
www.sdmaritime.org



San Diego sportsman and entrepreneur, Bill Poole, has released (in 2007) *Fish or Cut Bait…* **offering a fascinating overview of the history of sportfishing as he lived it.**

All profits from the book will go to the Bill and Ingrid Poole Foundation, which has been established to enhance the lives of young girls and boys so they may experience the outdoor enjoyment of fishing and hunting, which in turn teaches the importance of sound conservation practices, good ethics and the understanding of personal responsibility.





Maritime Museum member and contributing editor, author and artist Ed Ries has written two books on our fishing history. *Tales of the Golden Years…* **is now in its second edition, 2007.**



Dedication to:

San Diego's 1928 Pioneer Fishermen

Research of names prepared by Vito Sardo
Photograph made available by Vito Sardo, originally taken by John Canepa's mother

For nearly 150 years, San Diego attracted fishermen and their families from all over the world. From its humble beginnings in the mid-nineteenth century, the rich and vibrant history of commercial fishing in San Diego was the product of years of technological innovation, hard work and risk, by generations and differing nationalities (Chinese, Japanese, Italian, Portuguese, etc.) seeking a better life for themselves and their families.

This rare 1928 photograph pictures many of those from the Italian-American community who helped establish the commercial fishing industry (in particular, the Tuna Industry), in San Diego.

** The Editor of Mains'l Haul welcomes any additions or corrections to the list of names.*

1 Francesco Piranio (boat *Jennie*), or John Carnilia (uncle to "Cigar" & John Dentone)
2 Andrew Asaro (son-in-law to #9)
3 Unknown
4 Angelo Amato
5 Pepe "Laci, Laci" (He stuttered...went back to Italy)
6 Josephine Giacalone (daughter to #9)
7 Mary Giacalone (daughter to #9)
8 Salvatore Piranio
9 Paolo "Chiasco" Gicacalone
10 Nino Asaro (father #2)
11 Francesco "Pennareda" Gicacalone
12 Vito "Big Vito" Giacalone (son to #11)
13 Angelo "Regatin" Zolezzi or Guiseppe Collini
14 Louis Massa (boat *St. Mary*)?
15 Nicolo Palestini
16 Sam "Sibastiano" DiMaggio
17 Angie DiMaggio (daughter #16)
18 Ignazio "Pinnareda" Giacalone
19 Nick "Stinker" Giacalone (son to #18)
20 Agustino "Fugo" Ghio (father of "Macarel" Ghio)
21 Joe Corrao (brother to #27)
22 Sam Buompensiero
23 Renaldo Corona (stepfather of Danny Battaglia)
24 Leonardo "Nardo Diana" DiSanti
25 Sam "Turi Santo Vento" Asaro
26 Mario Giacalone
27 Sam Corrao (boat *Rex*, brother #21)
28 Matteo "Schiluso" Giacalone
29 Tom "Tonnuso" Giacalone
30 Pete Crivello (brother #97)
31 Agostino "Ciecato" Zolezzi (father #32)
32 Stefano Zolezzi (son #31)
33 Nino Carramagna (father of Vince & "Blackie")
34 Antonino "Nino Diana" DiSanti
35 Frank Buono
36 Luigi Guidi (father to Gus, Louie, Tony & Julio)
37 Giovannino Buompensiero (brother #42)
38 Giovannino Tarantino
39 Joe Turrigiano (fished on Anthony M)
40 Vincenzo Gicacalone (Nana's father)
41 Francis Giacalone (daughter #40)
42 Matteo Buompensiero (boat *Alpino*, brother #37)
43 Francesco Marino (father of Carl, Frank, etc.)
44 Giacomo "Pomora" Canepa (Nephew of #47)



45 Parisi Canepa (boat *Stella Di Genoa*)
46 Ernesto Canepa
47 Andrea "Andreing" Canepa
48 Vito "Spacca Rizzi" Quinci
49 Joe Marline (son #50)
50 Frederico Marline (father of #49)
51 Giacamo "Iago Cimedra" Bono
52 Rosario Giacalone
53 Guiseppe Asaro
54 Antonio "Tagio" Canepa
55 Unknown
56 Vincenzo Bologna (father #90)
57 Frank Corrao (brothers #21 & 27)
58 Salvatore Fronterio (father of Jasper & Joe)
59 Bartola Sardo (nephew of #136)
60 Sam Ingrande (boat *Virginia R*)
61 Joe Lograsso (father of Vito & Calogero)
62 Lorenzo Piraino (father of Nino, Nick & Emil)
63 Andrea Melanese (father of Joe, Pete & Andy)
64 Marco "Calabrese" Zottolo (father of Vito)
65 Frank Zottolo (son #64)
66 Dominico Piro (father of Charlie)
67 Dominico "Miniging" Ghio (father of Mingo)
68 Frank Navaro (boat *Nina Ann*)
69 Unknown
70 Salvatore Piranio (father #71)
71 Frank Piranio (son #70 - fished on *Conte Bianco*)
72 Carlo "Cariccio" Giammanco (father of Frank & Pearl)
73 Unknown
74 Unknown
75 Unknown
76 Unknown
77 Giovanni "John Baling" Vattuone
78 "Leone"
79 Pietro Tarantino (boat *Vincenzo Mario*)
80 Mario Tarantino (son #79)
81 Vince Tarantino (son #79)
82 Tony, "The Austrian"?
83 Salvatore "Tutti" Mageri (father of Stella)
84 Nicolo Trevisano
85 ? Carniglia
86 Matteo Castagnola (brother #115)
87 Petrino Principato
88 Unknown
89 Umberto Zolezzi (killed on boat *Olympia*)
90 Angelo Bologna (son #56)
91 Leo Navarra (son #108)
92 Nick Cola
93 Frank Filippone (son #94)
94 Gaetano Filippone (father #93)
95 Carlo Daleo
96 Unknown
90 Sibastiano Crivello (brother #30)
98 Francesco Buompensiero (brother of Frank)
99 Unknown
100 Unknown
101 Michael "Suntin" Stagnaro
102 Gaspano Giacalone (father of Cecelia)
103 Unknown
104 Bartolo "Lo Mastro" Ballatore (father of "Spider")
105 Unknown
106 Guiseppe "Peppe Chighi" Gangitano (father of Andy)
107 Vattolo Frontiero (father of Vito, who had fish truck)
108 Calogiaro Navarra (father #68 & 91)
109 Ambrosio Tocco
110 Sam Daleo
111 Sam Daleo (cousin #110)
112 Matteo Ballatore (bought Napolitano Store, Bro. #104)
113 Batista "Baccia" Ghio
114 Andrea Castagnola (boat *Conte Bianco*)
115 Felecin Castagnola (brother #86)
116 Gaspano Daleo (boat *Azuma*)
117 Giovanni Zolezzi (husband of Agostina)
118 Giacamo "Giacotin" Carniglia (father of Tom, boat *P.Q.*)
119 Unknown
120 Guiseppe Flammini (father of "Jeep")
121 Steve Stagnaro
122 ? "Paladin" Stagnaro (brother of #101)
123 Pietro Corrao (father of Sam, Andrew, Tom, etc.)
124 Nicolo "Big Shoe" Adamo (father of Vince)
125 Unknown
126 Joe Dentone (father of Guitardo & John)
127 Pietro "Malaguerra" Bologna
128 Eleanor Bologna (daughter #127)
129 Sammie Bologna (Son #127)
130 Antonio "Gadornio" Giacalone
131 Francesco Turrigiano (brother #39)
132 Lorenzo Lograsso (father of Joe)
133 Joe Asaro
134 Antonino Giacalone
135 Victor La Pinta
136 Bartolo Sardo
137 Salvatore "Pancia Bagnato" DiMaria (father of "Tootsie")
131 Guiseppe "Roma Inn" Ascuitto
139 Salvatore (Sam) "Busciolito" Sardo
140 Unknown
141 Gaetano "Lo Taddro" Giacalone (father of Spano, boat *San Genaro*)
142 Andreo Ferraio (Geno's father)

excerpted from

Tuna – The End of the Line



The Story of the Sa

Copyright © 2007 by Julius H. Zolezzi and Lawrence D. Bradley, Jr.

This photograph, circa 1940s, exemplifies the hard-fought battle between the tuna fishermen and their powerful adversary.

From the American Tunaboat Association, Zolezzi Photographic Collection, MMSD

Editor's note: The following article represents the first three chapters of an unpublished book and no part of this article may be reproduced without the express written permission from the authors. The Maritime Museum of San Diego is grateful to the authors for allowing its presentation in *Mains'l Haul*.

n Diego Tuna Fleet

Julius H. Zolezzi and Lawrence D. Bradley Jr. **have combined their expertise and co-authored *Tuna – The End of the Line,* which is a comprehensive look at the early history of the San Diego Tuna Fleet to the turn of the twenty-first century. It traces the rise of the fleet, focusing on the Italian and Portuguese fishing communities, the prosperous years which saw innovations and technical advancements, followed by the beginning of the end – the years of embattlement with international controversies over fishing rights, and the increasingly vocal environmentalist protests, which tightened the net around the fishing industry as a whole.**

While Mr. Zolezzi is able to bring to the book first-hand accounts of life at sea, having begun his career propped-up on the skipper's chair at nine years old aboard his father's boat; Mr. Bradley lends half a century of legal expertise, having studied law at Stanford University, then specializing in Admiralty and Insurance Law for nearly forty years. Mr. Bradley served in the U.S. Navy during the war years, reaching the rank of Lieutenant Commander. While in the Navy, he was on assignment for the Department of State, working on International Conferences on Safety of Life at Sea. Mr. Bradley's extensive career in Maritime Law provides the foundation for his account of the demise of the Tuna Fishing Industry and the intricacies of the legislative and judicial jockeying for position that culminated in the industry's downfall by the 1990s.

A third-generation Italian fishermen, having fished the waters from the Eastern to Western Pacific, from pole-fishing to net fishing, skipper of bait boats to the super seiners, former president of the American Tunaboat Association, Julius Zolezzi, President of Zolezzi Enterprises, Inc., still oversees the dwindling Tuna Fishing Fleet. The Tuna Fleet, having numbered about 150 boats in 1972, down to thirteen boats in 2008, is now relegated to fishing the waters of the Western Pacific.

Pictured is the second generation of the Zolezzi family's *Lone Wolf*. The first *Lone Wolf*, a wooden bait boat, was built for less than $70,000 by John B. Zolezzi in 1937, and established the family in San Diego's tuna boat fleet. Son Julius built the all-steel, high-tech super seiner *Lone Wolf* in 1982. The $10 million tuna boat was one of the last built for the U.S. fleet.

Courtesy the Zolezzi Private Photographic Collection



1800s THE EARLY DAYS
FISHING OFF POINT LOMA

Late in the nineteenth century Italians came from Genoa and Sicily, and Portuguese came from Portugal and the Azores to San Diego, California, to make a living fishing in San Diego waters. Some came from closed whaling stations in California; others came from the cold, stormy seas off Gloucester and New Bedford and the Grand Banks off Newfoundland; and some journeyed from San Francisco, where their homes had been destroyed in the earthquake of 1906. Most of the emigrants were skilled fishermen; they journeyed to San Diego because they had heard there was an abundance of fish in the waters off Point Loma, in San Diego, and the climate was mild – comparable to Sicily and the Azores. The Portuguese emigrants settled in the La Playa area of Point Loma. The ltalians established a colony a short distance inland from San Diego Bay, a few blocks north of what is now downtown San Diego, in the area fittingly known today as "Little Italy".

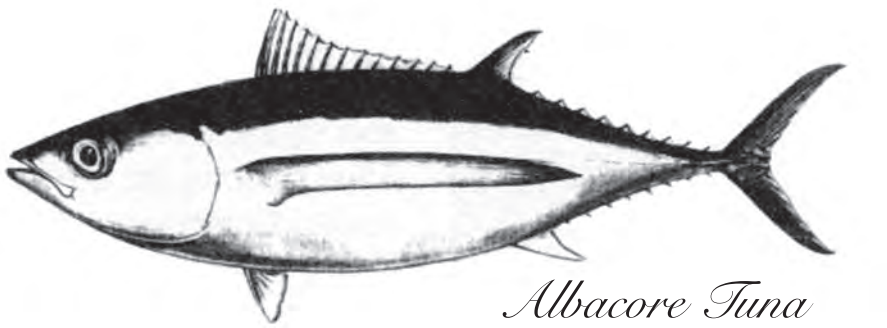
Although the Portuguese and Italian emigrants tended to settle in colonies, they quickly integrated into the activities and affairs of the surrounding communities. Those who could not speak English quickly learned it. The children went to public schools, were good citizens, and were anxious to learn. Many of the boys were outstanding athletes and helped Point Loma and St. Augustine's high schools win many sports trophies. Most of the boys went fishing during their summer vacations with their fathers and after they graduated from high school, many made fishing their career. These second generation Portuguese and Italian boys, with their natural instincts for exploring, and with the guidance of their fathers in fishing, became world-renowned productive and innovative fishermen. At the height of the Tuna Industry's prominence, the September 1973 issue of *Fortune* magazine said about them: *Americans really excel in only one segment of the world's fishing industry. The efficient United States tuna fleet based in San Diego and Puerto Rico roams the high seas for its prey, piles up hefty profits and inspires foreign emulation.*

When the Portuguese and Italian emigrants settled in San Diego in the 1890s, there was no tuna fishery – that would come later. The Portuguese and Italians fished single-handed a short distance off Point Loma in small dories, on day trips, using their traditional method of catching fish by hook-and-line. They caught rock cod, yellowtail, white sea bass, barracuda, bonita and halibut, which they sold as market fish. There were sardines in San Diego Bay and along the coast in Southern California, but sardines are caught in a net, and net fishing was not a method used by the Portuguese and Italians. The sardines were caught primarily by the San Pedro Slavic net fishermen.

Prior to 1893, a cannery on San Francisco Bay packed sardines, but when the sardines disappeared in 1893, the cannery had nothing to pack and so it was disassembled and reassembled in San Pedro, California. It was renamed the Southern California Fish Company and it packed sardines and mackerel. Sardines have a habit of suddenly disappearing and they disappeared off Southern California in the summer of 1903. Without sardines to can, the Southern California Fish Company had to either develop another fish to pack or go out of business. While experimenting, the cannery discovered that albacore made an excellent quality solid white pack when properly cooked and canned. Southern California Fish Company started canning albacore in 1903, and encouraged the San Diego

fishermen to catch albacore. Canned albacore was popular with consumers and the demand grew rapidly. Soon the San Diego fishermen were not able to supply the canners with an adequate supply of albacore.

The traditional method of hook-and-line fishing was used in the early days to catch albacore, but the more efficient method of trolling for albacore with a line to a jig with a feathered hook, or a sardine or anchovy on a hook, was soon developed. By 1907, albacore fishing extended south to Ensenada, in Baja California, Mexico. The number of canneries grew in San Pedro and San Diego, with the San Diego and San Pedro albacore fleet expanding to about 400 boats. To catch albacore the San Diego fishermen abandoned their dories and began using boats powered by gasoline engines, about thirty to forty feet long, but they were limited to day or overnight trips because their boats lacked refrigeration or icing capabilities.



Albacore Tuna
Thunnus alalunga

Despite the abundance of albacore at times off Southern California, by l910 the San Diego and San Pedro canners had a problem – their supply of albacore to pack was sporadic and consumer demand far exceeded the supply. The canners realized something had to be done to obtain a steady supply of albacore to pack and meet the growing market. However, albacore only appeared periodically, from June to October, and some years there was little or no show of albacore. The problem lies in the water temperature. Albacore swim in ocean temperatures ranging from 60° to 67° Fahrenheit. If the ocean water is too warm, as it can been occasionally off Southern California, albacore will swim offshore around the warm pocket of water between Ensenada (a short distance south of San Diego), and Point Conception, California, and then come back inshore near Morro Bay, or in the waters off Northern California, where the water temperature is cooler and to their liking.

In some years when the albacore did not show up there would be an abundance of yellowfin and skipjack because those tuna like the ocean temperature to be in the range of 68° to 80° Fahrenheit. The sensitivity of albacore and other species of tuna and dolphin to water temperature plays a significant role in the tuna fishery.

Something had to be done by the San Diego and San Pedro canners to obtain an adequate supply of albacore to pack. Without a steady supply, the canners would be forced out of business and lose the developing market for canned albacore. Reports reached the canners in San Diego and San Pedro that large schools of yellowfin and skipjack tuna had been sighted in the waters off Baja California. Tuna had been eaten since ancient times, but only single tuna cooked or sometimes smoked. The canners knew that yellowfin and skipjack could be canned, although the quality would not be as good as

Below: The Japanese were among the first to fish in San Diego waters. Many of their fishing techniques and equipment were adapted by the Portuguese and Italian fishermen including the use of bamboo poles with their variations of one-, two-, three- and four-pole connections by line and swivel, the use of the "squid" as part of the barbless hook method of landing tuna, and "chumming," which attracted the tuna with live bait.

San Diego Historical Society Photographic Archives



albacore. The canners saw the opportunity, but realized that the San Diego and San Pedro fishermen did not have boats capable of fishing off Baja California, so beginning in 1910, the canners set up inducements to help the fishermen build larger boats to fish off Baja California.

1900s SAN DIEGO TUNA BOATS HEAD SOUTH

ln 1910, with the help of the San Pedro and San Diego canners, the San Diego fleet commenced to fish south of the California-Mexican border for yellowfin and skipjack. At the time, the right to navigate and fish offshore a foreign nation was governed by a doctrine enunciated 400 years earlier by the Dutchman Hugo Grotuis. In 1608, Grotuis set forth the doctrine of "Freedom of the Seas" in his book, *Mare Liberium*. Under Grotuis' view, the high seas, beyond a limited distance offshore, belonged to no nation and were the property of all mankind. Thus, beyond the territorial seas of coastal nations, the fishing vessels of all nations had an equal right to navigate and fish without being subject to regulation or the sovereignty of any nation, other than the nation whose flag the vessel flew. The Freedom of the Seas concept was never adopted in a formal treaty, although by common usage a distance of three nautical miles offshore became the jurisdictional limit. Three miles was adopted because in early days that was the distance at which cannon shot could be effective and the coastal state could assert its sovereignty right. In 1977, after many years of dispute, the right of a coastal nation to regulate fisheries off its shores, extended to 200 nautical miles seaward. The San Diego tuna fleet eventually fished throughout the entire Eastern Tropical Pacific Ocean as far south as Chile, and played a significant role in negotiating the disputes concerning offshore fishing rights.

By 1910, the San Diego dory fishermen had graduated from

single-handed dory boats to two man trawlers fishing for albacore offshore Southern California. Although the San Diego albacore boats had grown in size to two man trawlers (35 to 45 feet long), they had no ice or refrigeration capability, hence they were limited to day fishing trips. To make it possible for the San Diego boats to fish off Baja California, the canneries set up stations along the Baja California coast at Turtle Bay, Cedros Island, Magdalena Bay and Cabo San Lucas to enable the San Diego fishing boats to deliver their day's catch to one of the stations. The canners' stations had freezer plants to store the daily catch of tuna, which was frozen at the station and shipped in freezer freighters to canneries in San Diego or San Pedro. The canners' Baja stations also had spare parts, fuel and supplies for the San Diego fishing boats.

At first, Japanese fishermen from San Pedro dominated the tuna fishing off Baja California. By 1915, the Japanese fishermen caught about eighty percent of the tuna caught off Baja California. The other twenty percent was caught by Portuguese, Italians and Slavs from San Diego and San Pedro. The Japanese fished on boats owned and operated by large Japanese fishing companies operating from San Pedro, California. In contrast to large Japanese company ownership, San Diego Portuguese and Italian families owned and fished their own boats. Most of the Slavic boats from San Pedro were also family-owned.

The Portuguese and Italian fishermen learned fast and caught an increasing share of tuna off Baja California. The San Diego fishermen learned to use the Japanese method of catching tuna — chumming with small anchovies or sardines to draw a tuna school close to the bait boat, where the tuna could be hooked on a barbless hook, on a short line to a bamboo pole, then held by a fishermen who would jerk the hooked tuna over their shoulder, release the tension on the hook and drop the tuna on deck. San Diego fishermen built larger boats with long-range fishing capability which they called bait boats, and by 1916 they were fishing as far south as Cabo San Lucas at the southern tip of Baja California. By 1919, they were fishing 900 miles south of Cabo San Lucas.

The Baja California tuna fishery was profitable for San Diego fishermen until 1924 when the Mexican government raised the tax, or duty, on tuna landed at the fishing stations from $5.00-per-ton to $13.60-per-ton. A second Mexican Baja California province decided to levy a similar tax on the same catch of tuna, which increased the tax paid by the San Diego fishing vessels on a ton of tuna landed at a shore station to $37.20. Although the tuna had been caught on the high seas and not within the three mile jurisdictional limit of Mexico, the San Diego fleet's catch had been landed in Mexico and therefore was subject to an import or export tax. The San Diego boats were also compelled to pay for a permit to catch sardines or anchovies for bait in bays, or close to shore in Mexico's territorial waters. With the canners paying $80-per-ton for yellowfin tuna in 1924, the $37.20 tax and the charge for a bait permit, San Diego tuna fishing off Baja California became uneconomical.

When Mexico imposed its tax on tuna caught by the San Diego fishermen and landed at Baja California stations, American consumer demand for canned tuna was increasing – tuna made excellent sandwiches, salads and casseroles. In 1928, the Mexicans reduced the tax to $26.84-per-ton in an attempt to win back the business they had lost, but the tax was still too much and too late. The Baja California cannery stations were closed, but the canners needed tuna. To capitalize on the canners' need for tuna, the San Diego owners built larger tuna bait boats, 60 to 80 feet long, with refrigerator capability for long-range fishing, allowing them to return to San Diego and San Pedro with their catch

Right: The San Diego-based tuna clipper *Atlantic*, built by Campbell shipyard for M.O. Medina, made an historic voyage to distant waters in 1926. Medina was the first to build and captain the long-range tuna boats, to use radar, to install refrigeration in the holds and to carry a wireless transmitter aboard. He was considered the true pioneer fisherman.

MMSD Collection P-6313

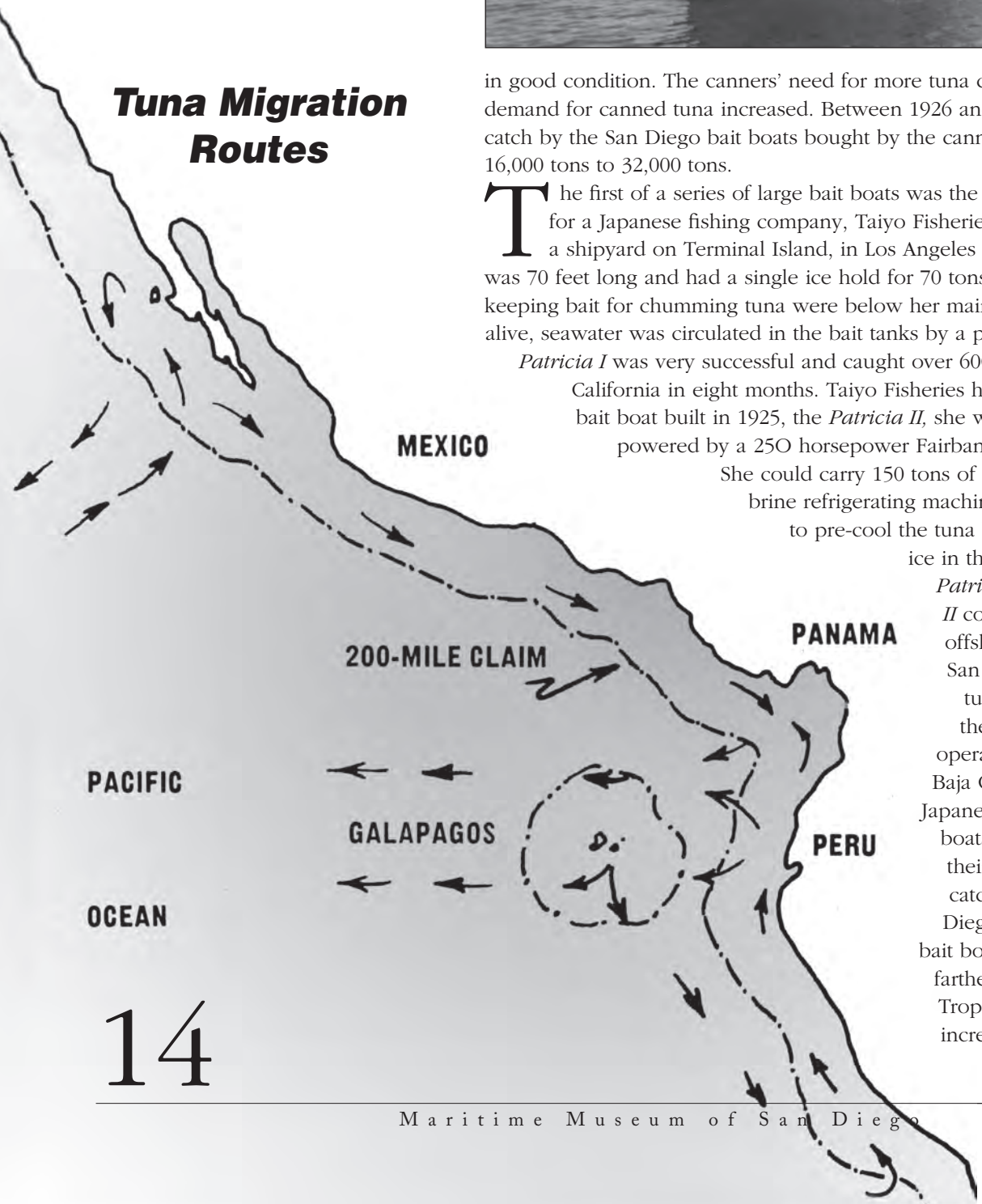


in good condition. The canners' need for more tuna continued as consumer demand for canned tuna increased. Between 1926 and 1929 the annual tuna catch by the San Diego bait boats bought by the canners increased from 16,000 tons to 32,000 tons.

The first of a series of large bait boats was the *Patricia 1*, built in 1924 for a Japanese fishing company, Taiyo Fisheries. *Patricia l* was built at a shipyard on Terminal Island, in Los Angeles Harbor, for $40,000. She was 70 feet long and had a single ice hold for 70 tons of tuna. Her tanks for keeping bait for chumming tuna were below her main deck. To keep the bait alive, seawater was circulated in the bait tanks by a pump.

Patricia I was very successful and caught over 600 tons of tuna off Baja California in eight months. Taiyo Fisheries had a second large bait boat built in 1925, the *Patricia II,* she was 100 feet long and powered by a 25O horsepower Fairbanks Morse diesel engine. She could carry 150 tons of tuna packed in ice. A brine refrigerating machine in the galley was used to pre-cool the tuna before it was packed in ice in the fish hold. Although *Patricia I* and *Patricia II* could have fished far offshore and returned to the San Pedro canneries with tuna in good condition, the Japanese limited their operations to fishing close to Baja California. Because the Japanese and Slavic tuna fishing boats never went far offshore, their percent of the tuna catch declined as the San Diego Portuguese and Italian bait boats fished farther and farther out into the Eastern Tropical Pacific Ocean, increasing their tuna catch.

Tuna Migration Routes



The San Pedro Slavic net boats fished primarily off Baja California and occasionally ventured a few hundred miles south of Cabo San Lucas. The Eastern Tropical Pacific Ocean, from Mexico south to Chile, and offshore almost to the Hawaiian Islands, was left to the San Diego tuna boats.

Why was it that the exploration and development of a tuna fishery in the entire Eastern Tropical Pacific Ocean was left to the San Diego Portuguese and Italian fishermen? The answer lies in their inherited instincts and skills. Their heritage as seafarers, dating back centuries, guided these fishermen as they adapted and expanded their skills to an ever-changing maritime environment. Over time they developed the necessary technology for successful long-range fishing.

1920s to 1940s

DEVELOPING A TUNA FISHERY IN THE EASTERN TROPICAL PACIFIC OCEAN

Until 1926, the San Diego tuna fishing fleet used wooden bait boats 50 to 100 feet long. Their boats were adequate for fishing along the coast where they could catch bait and then go offshore 100 to 200 miles to catch a load of yellowfin or skipjack. The San Diego fisherman heard there were huge schools of yellowfin tuna around the Galapagos Islands, 500 miles off the coast of Ecuador. However, the San Diego bait boats were not large enough to carry enough ice to reach the Galapagos Islands, catch the yellowfin and return to San Diego or San Pedro with the iced yellowfin catch in good condition. These fishermen also knew that there were islands and fishing banks farther offshore from where they had been fishing, but their boats were too small to fish those islands and fishing banks.

Fishing for yellowfin or skipjack south of the Mexican border first required obtaining bait consisting of anchovies or sardines. In Mexico, the favorite bait locations were Turtle Bay and Magdalena Bay in Baja California, and Banderas Bay off Puerto Vallarta. Further south, bait could be found in many bays and inlets, particularly around the Gulf of Fonseca (a large body of water off El Salvador), Honduras, Nicaragua, in the Gulf of Nicoya off Costa Rica, and in the Gulf of Panama. When the bait boats were small, they could get close to shore to net bait off the bait boat. As the bait boats became larger with deeper drafts, they had to remain offshore and use a skiff, speed boat and a bait receiver to go to shore and wrap a bait net around a bait school. The bait net is a small circular net which can be pursed into a small pouch and brought alongside the skiff, then the fishermen scoop the bait out and put it in the bait receiver, which can then be towed to the bait boat where the bait is scooped out and placed in the bait boxes. With their bait boxes full, the bait boats head for the fishing grounds offshore.

The possibility of fishing the Galapagos Islands and the banks far offshore attracted San Diego tuna fishermen and encouraged them to have larger bait boats built which could do the job. In 1926, a San Diego Portuguese fisherman, M. O. Medina, had Campbell Machine shipyard build a 112' bait boat, which he named *Atlantic*. Captain Medina was born in 1894 in Pico, Azores, and migrated to San Diego in 1912, where he became a leader in the San Diego fishing community.



Captain Manuel G. Rosa, second from left in the upper back row, was also one of the pioneers of the tuna fleet in San Diego. He and his crew are pictured on his boat in the 1930s.

MMSD Collection P-11284c

Atlantic had a 300-horsepower Union diesel engine and pumps to circulate sea water in the bait tanks to keep the bait alive. *Atlantic* relied on crushed ice and a cork insulated hold to preserve 110 tons of tuna packed in ice. Captain Medina wasted no time after *Atlantic* was delivered to him by Campbell shipyard. He set off on the maiden voyage to the fishing grounds off the coast of Mexico with a magnetic compass, sexton, timepiece, celestial calculation tables and crude navigation charts. *Atlantic* did not have a radio – the first radio installed on a San Diego tuna boat did not come until 1929, when one was installed on the *Emma R.S.,* a bait boat owned by Captain Guy Silva. *Atlantic* had a barometer to help Captain Medina forecast the weather, but nothing else – weather faxes and radio weather broadcasts would not come into service for many years.

A good friend of Captain Medina's, but a fierce competitor when it came to fishing, was Manuel Rosa. Manuel Rosa was born in Santa Cruz, Portugal, in the late nineteenth century and was fifteen years old when he immigrated to the United States. After serving in the United States Navy and other shore-side jobs, Rosa settled in San Diego, looked over the waterfront, recognized the opportunity, and decided to buy a fishing boat. In 1923, Rosa bought a 65-foot bait boat which at that time was the largest boat in the tuna fleet. Not to be outdone by M. O. Medina, Captain Rosa had Campbell shipyard build a 92-foot bait boat in 1927, which he named

Lusitania. Captain Rosa fished the *Lusitania* off the coast of Mexico, and far offshore islands and fishing banks.

Atlantic and *Lusitania* made it clear that larger bait boats with long-range capacity could capitalize on tuna fishing in the Eastern Tropical Pacific Ocean. They started a boat building boom and before 1927 was over, the 82-foot *Olympia* had been built for Captain Joe C. Monise and the 82-foot *Del Monte* was built for Captain Manuel Freitas. There followed the construction of many more San Diego tuna boats and during the period 1929 to 1945, 145 tuna bait boats were constructed for San Diego owners to fish for tuna throughout the Eastern Tropical Pacific. Because of their larger size and speed they were referred to as Tuna Clippers.

Tuna are migratory and do not stay long in the same place. They cover many hundreds of miles and the San Diego fishermen eventually learned their patterns of migration around the Eastern Tropical Pacific to the islands and fishing banks at different times of the year. The San Diego fleet was making regular trips to Clipperton Island, 600 miles off southern Mexico; Cocoas Island, 200 miles off Costa Rica, and the fishing banks off the coast of Mexico, Ecuador, Peru, Panama and Costa Rica.

Many fishing banks were found by San Diego fishermen. In 1928, with his new 72-foot bait boat *Uncle Sam*, Captain Frank Silva observed an area swarming with birds and with much surface turbulence in the ocean, about 450 miles south of San Diego and 60 miles off the Baja California coast. *Uncle Sam* was not equipped with a fathometer, or depth finder, so Captain Silva stopped *Uncle Sam* in the area of activity and took soundings with a lead line. A sea bank causes an upwelling of nutrients which creates a food chain for tuna, with the more obvious signs of bird activity signaling the location. Captain Silva named the bank "Uncle Sam" and tried to keep it a secret, but before long, during a good run of tuna, there were as many as twenty or thirty San Diego tuna clippers fishing the nutrient-rich bank. Over the years, thousands of tons of yellowfin and skipjack have been caught on Uncle Sam Bank.

Not long after Captain Frank Silva discovered Uncle Sam Bank, Captain Harold "Pop" Morgan was exploring an area near Uncle Sam Bank with his new steel 122-foot tuna clipper *Chicken of the Sea*. Captain Morgan was one of the few non-Portuguese and non-Italians to be successful in tuna fishing. When Captain Morgan sighted many birds working bait and dolphin jumping, *Chicken of the Sea* proceeded to the area and, with one of the first fathometers on a tuna clipper, Captain Morgan located and named the bank "Morgan Bank." In 1930, *Chicken of the Sea* made three trips to Morgan Bank of forty days each, returning with full loads of yellowfin tuna for a total of 452 tons, before the word was out and other tuna clippers were fishing Morgan Bank.

Uncle Sam and Morgan Banks are just two examples of the many tuna fishing banks discovered by San Diego tuna clippers. Usually the banks were named for the discovering vessel such as *Lusitania*, *Golden Gate*, *Picarota, Paramount* and *Uncle Sam*. Some banks were named after the tuna clipper's captain such as Brito, Rosa and Morgan Banks. One bank was named for its frequent climatic condition – Hurricane Bank. Large rocks rising out of the ocean and small islands with tuna in the surrounding waters were also discovered including the Revillagigedo Island chain of Clarion, Roca Partida, San Benedicto and Socorro Islands, about 600 miles southwest of the southern tip of Baja California.

The reason fishing for tuna around islands, rocks and over fishing banks



Strength and stamina were among the qualities of the pole fishermen, having to work for hours at a time in the racks in the roughest of sea conditions.

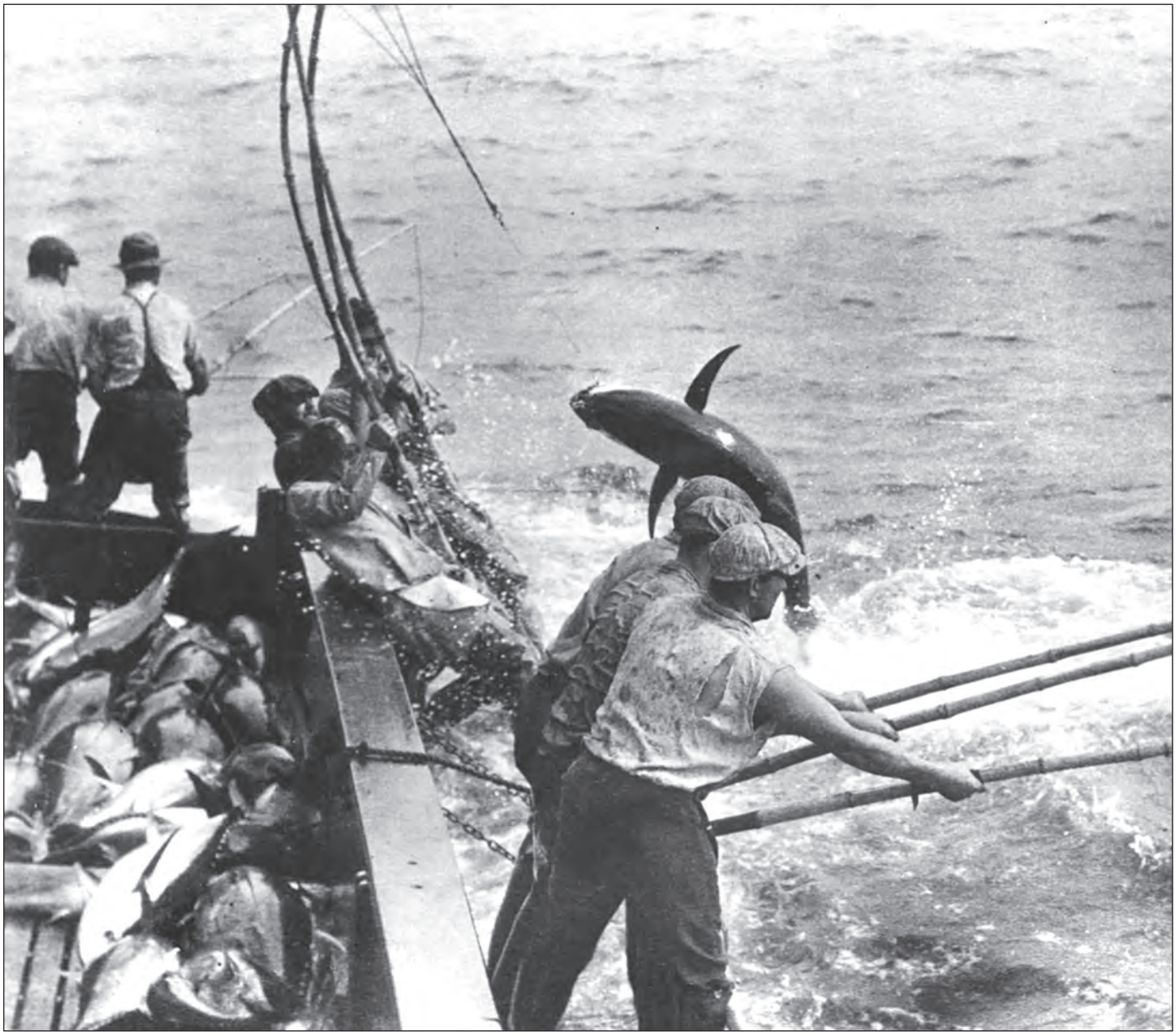
MMSD Photographic Collections

was so productive was the phenomenon of upwelling. Upwelling occurs around islands, rocks and over fishing banks where the food chain starts with phytoplankton, then goes up the chain to larger fish near the surface such as anchovies and sardines which the tuna feed on. The bait boats caught many yellowfin and skipjack around islands, rocks and fishing banks. Many yellowfin and skipjack were caught elsewhere such as under floating logs, kelp, debris or dead whales. There were many floating logs swept to sea by rivers flowing out of Central America. Some tuna were caught swimming by themselves and would be sighted only by a rippling or small disturbance of the ocean surface, which indicated a school of tuna was swimming close to the surface. Fishermen called such tuna schools a "breezer," because of the rippling or disturbance of the ocean's surface. On rare occasions, a large tuna school would be active enough to create a disturbance on the ocean's surface making the water literally appear as if it was boiling. Fishermen called these schools "boilers" or "foamers."

To be successful a boat had to have a good crew and a skilled captain. Bait boat fishing was labor intensive and required fishermen with experience, skill, strength and stamina to make bait and catch a load of yellowfin or skipjack. Sometimes during a good run on a large school of tuna, the fishermen would spend all day in the racks, fishing without stopping other than to pack the catch in the hold when the decks overflowed with tuna. During a hot run, the fishermen packed tuna until two or three in the morning and then they would be up at dawn for another day in the racks. This cycle could go on for two or three days and nights.

The fishing captain was the most important person in a crew and absolutely essential to the success of the boat. It was said that a skilled captain had to "think like a fish" in order to find the fish. The fishing captain also had to be a good weather man, have seaman's judgment, navigational skills, and know how to handle the crew.

To fish efficiently at great distances from San Diego, the San Diego owners constantly improved their tuna boats. Bait boxes or tanks, originally placed below the main deck, were raised to boxes above the main deck near the stern of the boat so the chummer could better throw bait into the ocean to attract tuna. Placing the bait boxes above the main deck created more room in the holds for the tuna catch, but made the boat less stable. Metal fishing racks or platforms (3' x 5') were installed outboard of the rail on the portside-aft and around the stern, and could be swung out for the fishermen to stand on and catch the tuna, which had been chummed with live bait into a feeding frenzy alongside the tuna clipper. Fishermen standing in the racks had



The three-pole method of tuna fishing is clearly demonstrated in this 1930s photo.

MMSD P-2749c

bamboo poles (originally introduced by the Japanese), to which was attached a short line with a wire leader to a barbless hook called a "squid." When the tuna bit on the squid, the fisherman, by keeping tension on the line to the squid, could prevent the tuna from getting off the squid. The object was to swing the tuna inboard and over the alleyway between the rail and the bait box, and then release the tension on the line so the tuna would come off the squid and drop into the alleyway.

If the tuna were larger than 30 to 50 pounds, a system was devised to attach two or three poles, each with a short line, to a swivel from which a short line would be led to the squid. In some cases, when the tuna was over 300 pounds, a fourth pole was added to stabilize the tuna. With good coordination, the fishermen could time the tuna's rush toward the bait thrown by the chummer, and when a big tuna grabbed a squid, the fishermen pulled in on the lines, continuing the tuna's forward momentum. The tension remained on the lines until the tuna was over the alleyway, then it was slackened with the squid coming out of the tuna's mouth, allowing the tuna to drop into the alleyway. It required considerable coordination and



By the 1950s certain safety measures were implemented onboard the bait boats. The chummer (standing above the 3 fishermen), was protected by a canopy; the fishermen wore hard hats and were girded by a belt with a pole support.

From the American Tunaboat Association, Zolezzi Photographic Collection, MMSD

strength to land a 200 to 300 pound tuna. A wildly thrashing big tuna could not be swung over the heads of the fishermen in the racks; it had to be swung outside the fishermen with the poles before it was dropped into the alleyway. It was dangerous work and occasionally a fisherman was hit and injured by a big tuna as it was swung over the alleyway.

To cope with big seas offshore, the fore-deck of the flush main deck tuna boats was raised. To keep the bait alive longer, better systems for circulating seawater in the bait tanks were installed. To better preserve the tuna catch, pre-cooling systems were installed to bring down the temperature of the tuna before packing it in a hold with ice. Eventually, ice was replaced by refrigeration systems which circulated cold ammonia, or Freon, through coils or pipes on the walls of the fish holds, to reduce the temperature in the holds and freeze the tuna. New tuna clippers were built with ten or twelve holds to carry the tuna rather than a single large fish hold. This enabled the chief engineer to better handle the catch of tuna and made it possible to fill some of the holds with bait for the voyage to the fishing grounds, and while looking for tuna. After the bait was used, the hold was cleaned and made ready to load with tuna. Seawater was pumped into the

hold and the temperature brought down to below freezing by putting large amounts of salt into the seawater before tuna was put in the hold. After the tuna was placed in the hold and frozen, the saltwater was pumped out leaving frozen dry tuna in the hold; this lightened the load and made the vessel more stable.

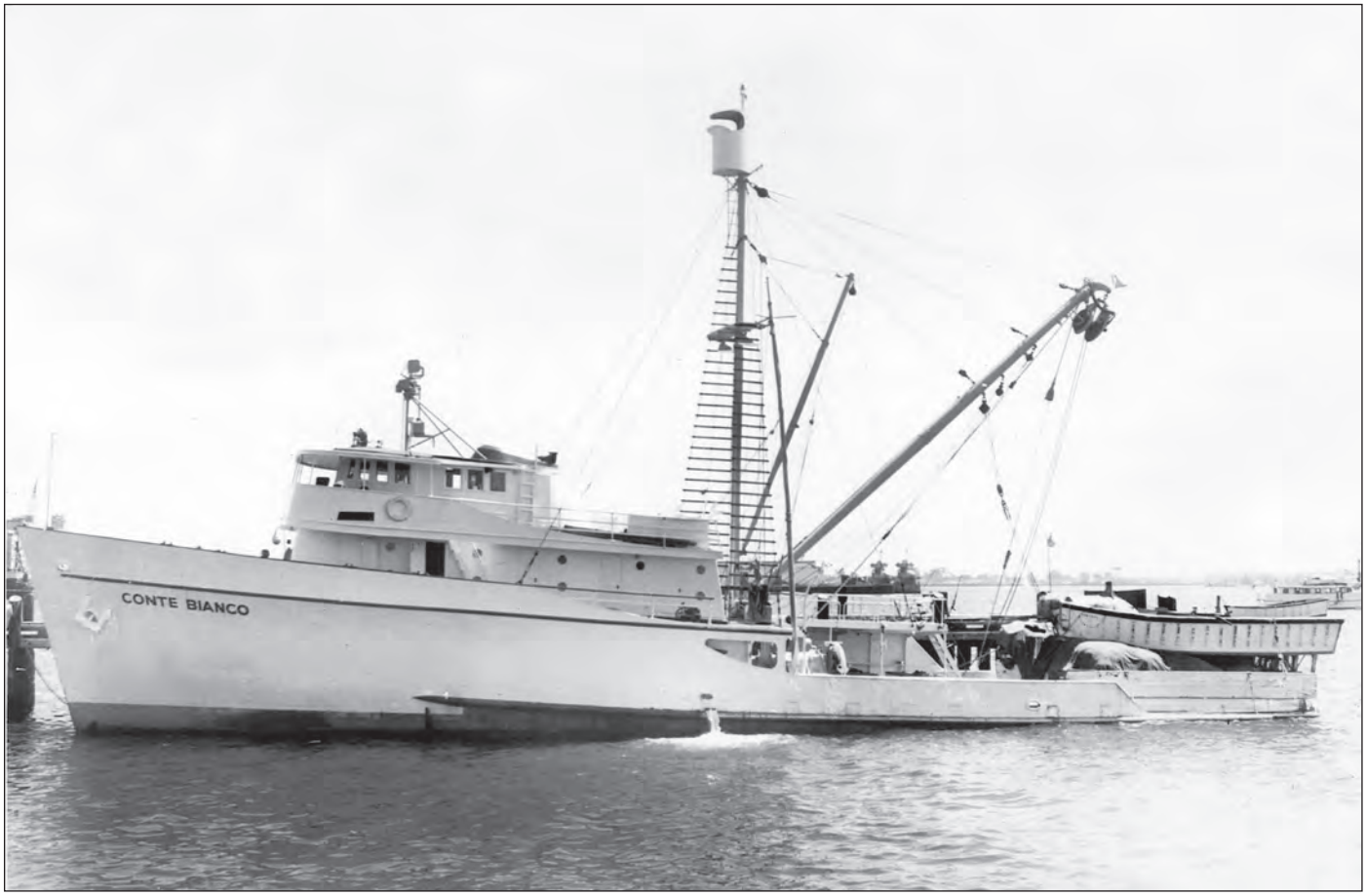
Bait boat fishing was hazardous and required the development of many safety measures for the protection of the crew. To protect the chummer from being hit by a flying squid, a canopy was installed over the bait box under which the chummer could stand. Fishermen in the racks wore helmets to protect their heads from wildly thrashing tuna as it was swung onboard. Pads were developed for fishermen to strap around their waists so that they could place the end of pole in the pad socket and protect their groin from pole thrust when bringing in a tuna. Sharks, attracted by tuna blood running from the alleyway, sometimes ended up in the racks and snapped at the fishermen before they could be thrown overboard. On a deep roll of the boat in a rough sea, the fishermen in the racks were up to their neck in the ocean – sometimes a fisherman would go overboard and have to be rescued.

Bait boat fishermen were also exposed to the danger of a ship casualty and there were many in the early days of bait boat fishing. The boats were vulnerable to capsizing by being top heavy as a result of improper loading, particularly after the bait boxes were placed above the main deck. Until captains became experienced with proper loading, several bait boats capsized or rolled over from top-heavy loading. Also, the navigation charts did not have well-marked rocks and hazards, hence there were strandings or groundings. Burning of a tuna boat occurred all too frequently, until good fire prevention and extinguishing measures were developed. Also, there were floodings from a broken seawater pipe to the fish holds, bait boxes or engine room, sometimes resulting in sinking.

Another great danger to the boats were sudden severe storms, particularly Tehuantepecs, strong winds which swept across southern Mexico and then offshore, and Chubascos (hurricanes), which formed off the Guatemalan coast and traveled north to Baja California, before heading west toward the Hawaiian Islands. Chubascos claimed several boats. It was believed that the 84-foot *Belle Isle*, which disappeared without a trace in June, 1933, was the victim of a storm in the Gulf of Panama, or a Chubasco off Mexico. The San Diego boats had no weather information other than the good judgment of the captain based on the barometer, sea and sky conditions, though sometimes weather information could be obtained from other boats.

Hull underwriters, which insured fishing boat casualties, established procedures to have surveyors test the boats for stability and issue loading instructions to the captains. A set of rules for the safety of the boats was established based on common sense and casualties. Underwriters required that the boats be checked for compliance with the rules by a surveyor as a condition to insuring the boat. By making the captains aware of the necessity of complying with the stability instructions and following safety requirements, the casualties and accidents were greatly reduced.

Between 1932 and 1935, the canners' demand for tuna slowed. Only four tuna clippers were built during that period and increased foreign competition adversely affected the San Diego Tuna Fleet. In 1933, 700,000 cases of Japanese canned tuna were imported and sold in the United States' markets. The large amount of imported tuna had a big impact on production of United



At 112 feet in length, *Conte Bianco*, built in 1935 by Campbell Machine, Inc. for the Castagnola and Massa families, was among the first of the expanding fleet of larger clippers built for long-range fishing.

From the American Tunaboat Association, Zolezzi Photographic Collection, MMSD

States' canned tuna, which in 1933 was reduced to 1.4 million cases annually. Matters became so bad that in 1934, President Roosevelt signed into law a bill that increased the duty on imported tuna canned in oil. As a consequence, there was a decline in imports of Japanese canned tuna which was packed in oil. Tariff and health concerns would later cause the Japanese to change their pack from tuna canned in oil, to tuna canned in brine water.

In the late 1930s, consumer demand for canned tuna once again increased and Japanese imports went down. More tuna clippers were built – San Diego tuna clippers were making regular long-range voyages to the Galapagos Islands; Clipperton Island, Cocaos Island, and to fishing banks off the coasts of Mexico, Ecuador, Peru, Panama and Costa Rica. San Diego owners installed freezer plants in Puntarenas, Costa Rica, and in Panama, to hold tuna caught by the San Diego tuna clippers until it could be shipped frozen on freighters to canners in San Diego or San Pedro.

The demand for tuna and the higher prices paid by the canners led to the construction of bigger and more efficient tuna clippers between 1935 and 1940. Tuna fishing had become very profitable and San Diego tuna clipper owners had the money to build new boats. In 1935, *Conte Bianco*, a 112-foot boat, was built by Campbell Machine, Inc. for the Castagnola and Massa families. *Conte Bianco* was followed by the construction of several larger tuna clippers with better refrigeration systems.

In 1937, the 128-foot *Belle of Portugal*, the 128-foot *Picarota* and the 129-foot *Victoria* were built at Campbell shipyard in San Diego. In 1938, the 136-foot *Queen Mary* and the 138-foot *Normandie* were built. In 1939, the 130-foot *Azoreana* and the 129-foot *American Beauty* were built.

The San Diego clippers built during 1935 to 1940 were not only larger than the earlier bait boats, they were better equipped and had improved refrigeration systems. The refrigeration systems worked well and top quality frozen tuna was delivered to the canners. Consumer demand for canned tuna continued to increase and by 1940, the canners were packing 3.9 million cases, which was up from 1.4 million cases in 1933 (there are 48 cans in a case of tuna). In 1940, the San Diego tuna fleet delivered 80,000 tons of tuna for which the canners paid $280-per-ton for yellowfin tuna.

Most of the successful San Diego tuna clippers continued to be owned by Portuguese or Italian families, and were manned by a family crew of fathers, brothers, sons, relatives and friends. Many of the boats had been increased in size so that they measured more than 200 gross tons, which meant that under United States law they had to have a licensed captain. Operating a fishing vessel had become more complicated as there were more data and information coming in by radio, and with the captain immersed in the process of fishing, a skilled navigator was required onboard. Therefore, "paper captains" with a license, were hired on most boats to navigate. In addition, since refrigeration had been installed on the boats, a competent chief engineer was required who knew refrigeration and what happened if the tuna was not properly frozen. San Diego tuna boats had excellent food onboard which required a cook who had reached the level of a chef, and could serve everyone in the crew the breakfast he wanted, a good lunch and dinner, as well as bake pastries and cakes. If the fishing boat was in good weather, it was customary to have a barbeque on deck.

Built in 1937 at Campbell shipyard, the *Belle of Portugal* was the pride of her day.

From the American Tunaboat Association, Zolezzi Photographic Collection, MMSD



Tuna fishermen worked on a share basis rather than for wages. Fishing on shares made it a joint fishing venture between the owner and the fishermen. Under the customary share system, the money received from the cannery for the tuna delivered was divided between the owner and the fishermen, after deducting trip expenses such as fuel, clearance and entry fees, salt, groceries, fish inspection costs, insurance on the tuna caught, fishing licenses, foreign port charges and other costs directly related to the fishing voyage. After deducting trip expenses, the net was shared – sixty percent going to the owner and the remaining forty percent to the crew. The galley, or expense for food, was paid by the crew and deducted from the crew's share. The crew's share, after deducting the galley expense, was distributed on the basis of one and a half or two shares to the fishing captain, one and a half shares to the chief engineer, one share to the experienced fishermen and the cook, and one quarter share to an inexperienced fisherman. Sometimes the owner would pay an extra share to an exceptionally good fishing captain, or if the fishing captain had a particularly good trip.

The owner made the capital investment to build or buy a boat, and from his share of the net proceeds of the trip, the owner paid the mortgage, the maintenance and repairs necessary to keep the boat in first class condition, the insurance premiums covering damage, total loss of the boat and liability for death and personal injury to crew members. Occasionally, there was a broken trip or fishing would be so bad that the catch proceeds did not pay for trip expenses. Technically, the crew was obliged to pay out of their own pocket for their share of the trip expenses, but it was the practice of the San Diego owners to assume the loss and not to call upon the crew to bear the loss.

Long-Range Challenges

Many factors have to be taken into account by the fishing captain to guide his boat to where the migratory tuna might be: the time of year, weather, ocean conditions and information from the captain's friends. The Eastern Tropical Pacific Ocean is a huge body of water. Tuna must swim at eight or more miles per hour in order to have enough oxygen passing through their gills to survive and they are inclined to constantly move around over considerable distances to find conditions most suitable to them. While in San Diego, the fishing captain could keep up-to-date on the movement and location of tuna schools, but once his boat left San Diego he was on his own. The fishing captain's experience was most important because the conditions could be so variable, tuna at times were difficult to find, so difficult there evolved a system of organizing code groups of five or six boats which used a prearranged code to exchange details of fishing conditions by radio – what was being caught and where.

Once in the fishing area the fishing captain thought best, the search for tuna began. Every boat had very large and powerful binoculars to search for signs of tuna. The oldest and most reliable method of locating a school of tuna was by the use of binoculars – 20 power 3" field was standard. Some of the binoculars were so large and powerful that it was necessary to place them in holding brackets or supports. The person with the best eyesight was assigned to the large binoculars secured on the wings of the bridge, or up in the crow's nest. Yellowfin brought a premium price, so San Diego tuna fishermen looked primarily for the telltale signs of a yellowfin school – dolphin jumping and birds working.

Airplanes from land bases had proven very successful in spotting fish close to shore. In 1931, the tuna clipper *Rajo* experimented using a pontoon airplane carried on the canopy over the bait box aft. The boom was used to put the pontoon airplane in the water so she could take off and fly around in search of tuna. However, the pontoon airplane was too large for *Rajo* and the operation of getting the airplane in and out of the water was cumbersome, consequently pontoon airplanes were not used in bait boat fishing. Later, helicopters would be used successfully by San Diego purse seiners to scout for tuna schools.

During the 1930's, San Diego bait boat owners installed the latest electronic equipment. Single-sideband radios were installed for long-range voice communication so the fishermen could call home, but more relevant to the operation of the boat, the captain could keep track of weather and fishing conditions by communicating with other boats, especially his code group. Depth sounders, gyrocompasses, automatic pilots, and radio direction finders were also installed during the 1930s on almost every long-range fishing boat out of San Diego. The San Diego tuna clipper fleet dominated the Eastern Tropical Pacific tuna fishery in the 1930s and caught ninety percent of the yellowfin and skipjack tuna.

In the l930s, with the development of larger and better equipped tuna clippers, the San Diego fishermen continued to follow their exploration instincts and looked for new fishing grounds at great distances from San Diego, even outside the Eastern Tropical Pacific Ocean. In 1932, the tuna clipper *Mayflower* explored the central Pacific Islands of Fanning and Palmyra, Christmas and Washington, but because of lack of bait few tuna were caught around those islands. In 1936, the tuna clipper *Del Monte* explored the Philippine Islands, but found so few tuna the exploration was abandoned and *Del Monte* was sold to Philippine interests. The Marquesas Islands were explored, but very few tuna were found, hence the Marquesas were never fished for tuna.

By 1937, the size of the Eastern Tropical Pacific Ocean tuna fishery and the success of the San Diego tuna fleet caught the attention of fishery scientists and the United States government. Scripps Institution of Oceanography at La Jolla, a short distance north of downtown San Diego, began to study the yellowfin and skipjack resources in the Eastern Tropical Pacific and report on their status. The Pacific Coastal Nations interested in tuna fishing held meetings to discuss the tuna stock in the Eastern Tropical Pacific Ocean and how to best protect and utilize the tuna. The Bureau of Fisheries, now the NOAA Fisheries, took an interest in the San Diego tuna fleet and began to collect data on its fishing. More and more attention was focused on the San Diego tuna fleet as it grew bigger and more successful.

San Diego tuna clippers that fished close to Mexico, Costa Rica, El Salvador, Nicaragua, Panama, Peru and Ecuador, occasionally were seized or arrested by the coastal nations for fishing too close to their shores, as those countries realized there was money to be made from the San Diego fishing fleet. To make things more difficult for the San Diego tuna boats, Mexico, Costa Rica, El Salvador, Nicaragua, Panama, Peru and Ecuador passed legislation expanding their jurisdiction over foreign fishing vessels beyond the accepted international three-mile limit to capitalize economically on San Diego boats fishing close to their shores.

Over the years, there were many arrests of San Diego tuna boats close to the shores of the Latin American coastal nations. Although the United States followed Grotuis' "Freedom of the Seas" concept, under "which the fish beyond three miles offshore belonged to whoever caught them," the United States government did not intervene in Mexico's or the Latin American coastal states' assertion of the right to control offshore fishing and charge a fee, not only for making bait in bays or lagoons, but for fishing close to their shores.

The San Diego tuna boat owners joined together and formed the American Tunaboat Association to negotiate fishing rights with Latin American nations. In general, the disputes were quietly resolved and relations were relatively harmonious, until after World War II when the dispute over the right of a coastal nation to assert fishery jurisdiction out to 200 miles offshore escalated into an international controversy.

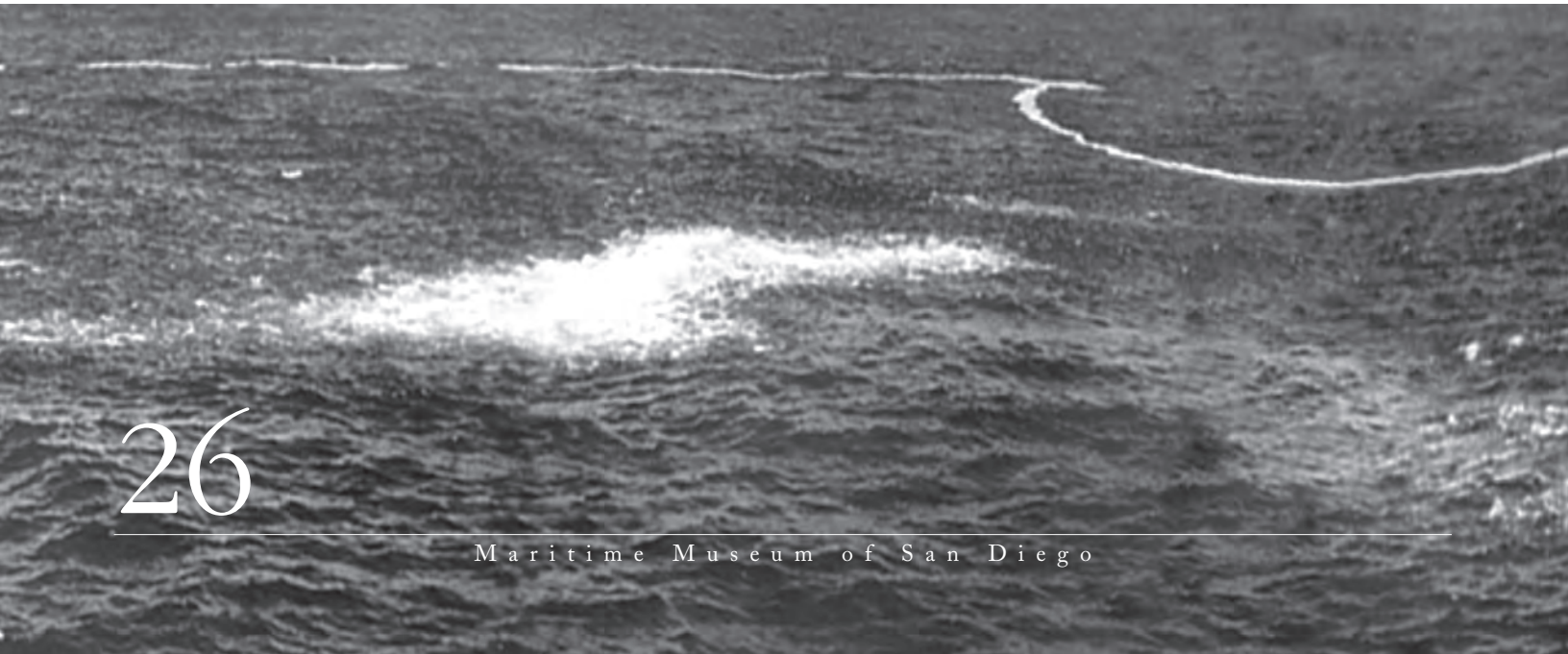
In 1939, with war breaking out in Europe, and threats against the Panama Canal, the United States called a meeting of the foreign ministers of the Pacific coastal states to discuss the effect of the European war on the Western Hemisphere, and to formulate a policy to protect the Pacific coastal states. Among the many statements emanating from the meeting, one was particularly important to the tuna fishery: in future years the foreign ministers would create a maritime zone, offshore of the Pacific coastal nations, to protect them from intruders. The 1939 Declaration of Panama, as it was known, stated that …***the waters, to a reasonable distance from the coast, shall remain free from the commission of hostile acts or from the undertaking of belligerent activities by nations engaged in a war.***

The zone established by the1939 Declaration of Panama was controversial under international law, and questioned by legal scholars. To placate the critics, it was pointed out that the Declaration only created a zone of security and did not extend territorial waters beyond the existing internationally recognized jurisdiction limit of three miles. Clearly, the Declaration was for security protection and not for application to the fisheries. However, after the war the Declaration was used by the Latin American coastal nations to assert that they could extend their control over fisheries beyond three miles offshore.

Most of the San Diego fishing fleet was requisitioned by the U.S. Navy and went off to war, so there was little fishing off Mexico and the Latin American coastal nations. The fishing jurisdiction dispute was put off until after World War II.

The composite photograph below captures the view from a fishing vessel of tuna "boilers" or "foamers."

Courtesy the Zolezzi Private Photographic Collection





The San Diego tuna boat owners joined together to form the American Tunaboat Association, serving as a forum for discussing and negotiating fishing rights. This photograph, circa 1950s, pictures the members of the ATA at that time.

From the American Tunaboat Association, Zolezzi Photographic Collection, MMSD

Sitting at Table (left to right):
1. M. O. Medina 2. Ed Madruga 3. Frank Perry 4. Vernan Brown.

Standing (left to right):
1. Harold Cary (President) 2. Frank Pastore 3. "Pop" Harold Morgan 4. Manuel Freitas 5. William Hoss 6. M. Medina 7. Ed Silva 8. Frank Gonsalves 9. Hank Madruga 10. Carl Medina 11. George Alameda 12. Pete Szalinski.



The Errand Boys of the Pacific:



TUNA CLIPPERS

By August J. Felando

THE SAN DIEGO UNION: FRIDAY MORNING, JULY 23, 1943

'Blue Water' Men of Tuna Fleet Sea Saga in Fight for Democracy



Tuna clippers joined the navy too and were painted a dull slate grey, while the stalwart Portuguese descendants learned to fire the guns that were mounted upon the deck. Equipped with the finest refrigeration systems, these trim craft became "errand boys" of the Pacific, delivering food and fuel to the fronts. One day these tunaboats will be convoying a fleet of small ships to Panama. Next month, perhaps, they'll be off Midway Island with gasoline for navy PBY's. Two months later, they'll be down in the Solomons running the "milk route" between Guadalcanal and Tulagi with supplies – part of the saga of men and boats.

Dating from 1924, a fleet comprised of large "bait boats" was developed by Southern California tuna fishermen and became known as "tuna clippers." These large "bait boats" (which held the live bait for attracting tuna), were equipped with powerful diesel engines and newly developed brine refrigeration, and were capable of fishing for tuna found migrating thousands of miles from San Diego, for trips of ninety days or more. By the end of 1929, tuna clippers were fishing off the Galapagos Islands (Ecuador), Cocos Island (Costa Rica), and Clipperton Island (French-owned).

Editor's Note: The Maritime Museum of San Diego requests any further information and/or historic photographs regarding the Tuna Clippers acquired by the military during World War II, to be forwarded to the editor@sdmaritime.org or librarian@sdmaritime.org. Research continues into the disposition of all vessels that served as military vessels for the U.S. Navy and the U.S. Army.

& WORLD WAR II

During the 1930s, two San Diego tuna clippers explored the Central Pacific, fishing in Hawaiian waters, the Palmyra Atoll, Christmas Island, and the Marquesas. This evolution of the tuna clippers during the 1930s was under observation by the U.S. Navy, resulting in wartime plans that included utilizing some of the largest tuna clippers for use as minesweepers. [1]

The tuna fishing families of Portuguese and Italian descent living in San Diego, supported by tuna canners and shipyard owners, were the principal risk-takers in building newer, larger, and more efficient high-seas tuna clippers. Italian, Japanese, and Dalmatian fishermen of San Pedro were building new purse-seine vessels for the fast developing California sardine fishery. Fishing failures by respected San Pedro fishermen, experimenting with super-large tuna purse seiners, had reduced interest by the Dalmatian fishermen in the distant-water tuna fisheries. Other events were impacting the Japanese fishing communities, particularly in the San Pedro area. During 1938, the U.S. Attorney in Los Angeles filed legal actions against non-citizen Japanese fishermen and their co-owners.

Wars in Spain, Ethiopia, and China were causing individuals involved in the California tuna and sardine fisheries to voice opinions that war between Japan and the United States was a real possibility. In July 1938, the Fishermen's Association of San Pedro announced that its members had pledged their vessels for use by the Federal Government in the event of war. In March 1939, it was reported in the trade magazine, *Pacific Fisherman:* "...the Office of the U.S. Attorney in Los Angeles [said] that [California-based] Japanese tuna clippers have followed the U.S. Fleet into the Caribbean Sea, where the Navy's war games were being held last Month." A spokesman for the Japanese immigrants operating twenty-one tuna bait boats based in San Diego vigorously denied this charge of "spying." During 1940 and early 1941, the Navy and Army purchased more than fifty purse seiners from California and Washington sardine and salmon fishermen for patrol, minesweeping and training operations. In mid-1940, San Diego tuna clippers, departing for Central and South American tuna grounds, were required to obtain permission first from the Secretary of Treasury. San Diego tuna clippers were reporting that U.S. Navy destroyers were on "neutrality patrol" and strictly inspecting every vessel traveling between San Diego and Panama.[2] By the Fall of 1941, tuna clippers fishing off the Galapagos Islands were reporting that U.S. Navy trained wireless operators were working a powerful radio station on Isabela Island, Ecuador. By October 1941, California shipyards and fishermen were complaining about unusual delays in receiving parts, materials, and supplies. Tuna fishing gear made in Japan, such as bamboo poles and hooks, were no longer being shipped to suppliers in San Diego.

August Felando has a unique perspective from which to view various aspects of the tuna fleet's history. From commercial fisherman and boat owner, to maritime lawyer, Mr. Felando has been closely associated with the Tuna Industry for more than fifty years. Born in San Pedro, California, he was introduced to commercial fishing in his early teens. Mr. Felando started his admiralty law practice in 1956 as an Associate with a law firm in Los Angeles, followed by a short term with a firm in San Pedro.

From 1960 to 1991, Mr. Felando managed the affairs (in the capacity of General Manager, or President), of the American Tunaboat Association. This position put him squarely in the center of negotiations and legislative, regulatory and judicial hearings with State and Federal Agencies, during the embattled years of the Tuna Industry's rise and fall. His emphasis on commercial fishing and other admiralty matters drew him into many aspects of the industry's plight over a forty-year period.

Among his many endeavors, Mr. Felando maintains an active membership at the Maritime Museum of San Diego, currently spearheading the creation and dedication of the **Tuna Fleet Service WW II, 1941-1945, Memorial** located along Tuna Lane, at the foot of G Street, San Diego bayside. The formal dedication will take place in February 2008.

At the time Pearl Harbor was attacked, there were ninety vessels in the California bait boat fleet, about eighty were at sea.[3] Three large tuna clippers were under construction for San Diego fishermen owners: *Commodore*, *Conte Grande* and *Sea Wolf*. The Navy acquired these three clippers from the owners during construction. Two other tuna clippers hulls were under construction at Martinolich Shipbuilding Company of San Diego. The Navy intervened and purchased the uncompleted hulls from the shipyard for conversion to minesweepers.[4] Of the fifty-three tuna clippers taken by the government during WW II, twenty-one never returned to the tuna fishery.

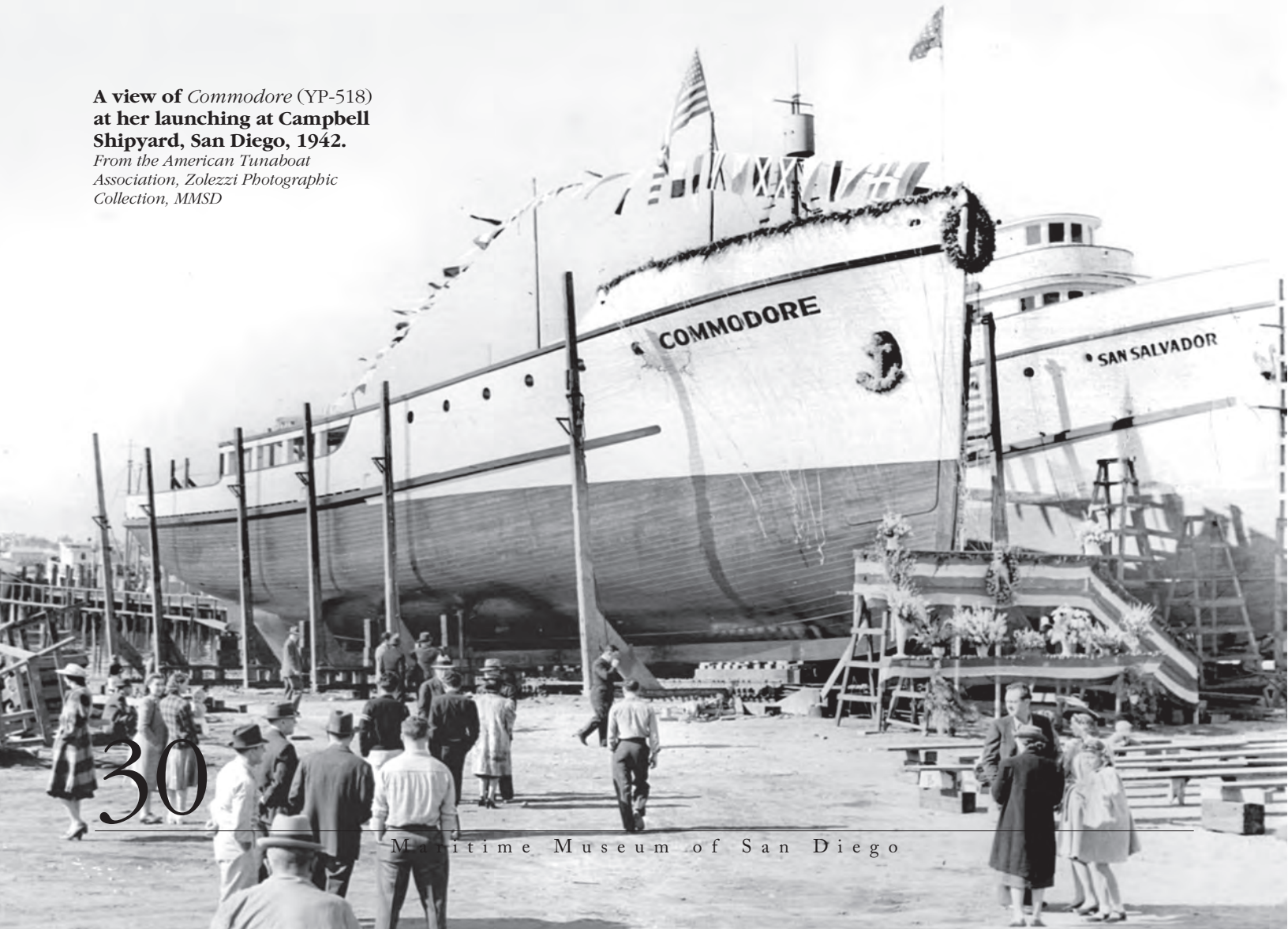
Tuna Clippers Requisitioned as U.S. Navy and Army Vessels in the Panama Canal Zone

When war was declared on 8 December 1941, the government ordered the Tuna Fleet to make port in California or the Panama Canal Zone.

An industry trade magazine reported:

> **The Navy announced Dec. 20 [1941] it had 'time chartered' ten long-range tuna clippers in the vicinity of the Panama Canal for temporary patrol duty. Fish already in the holds of these vessels was transshipped to San Diego by other boats…. Japanese nationals were removed from various tuna clippers wherever the vessels were apprehended after the Axis declarations of war. At San Diego, Italian nationals were not permitted to work on market boats or around fishing docks.[5]**

Of the eighteen tuna clippers ordered by the Navy to the port of Balboa, Panama Canal Zone, the Navy requisitioned eight under Bare Boat Charter arrangements.[6] Crewmen unable to prove American citizenship were interned in the Canal Zone. For transshipping tuna caught by the eight chartered tuna clippers, four clippers were permitted to depart Panama for California and transport these catches, as well as their

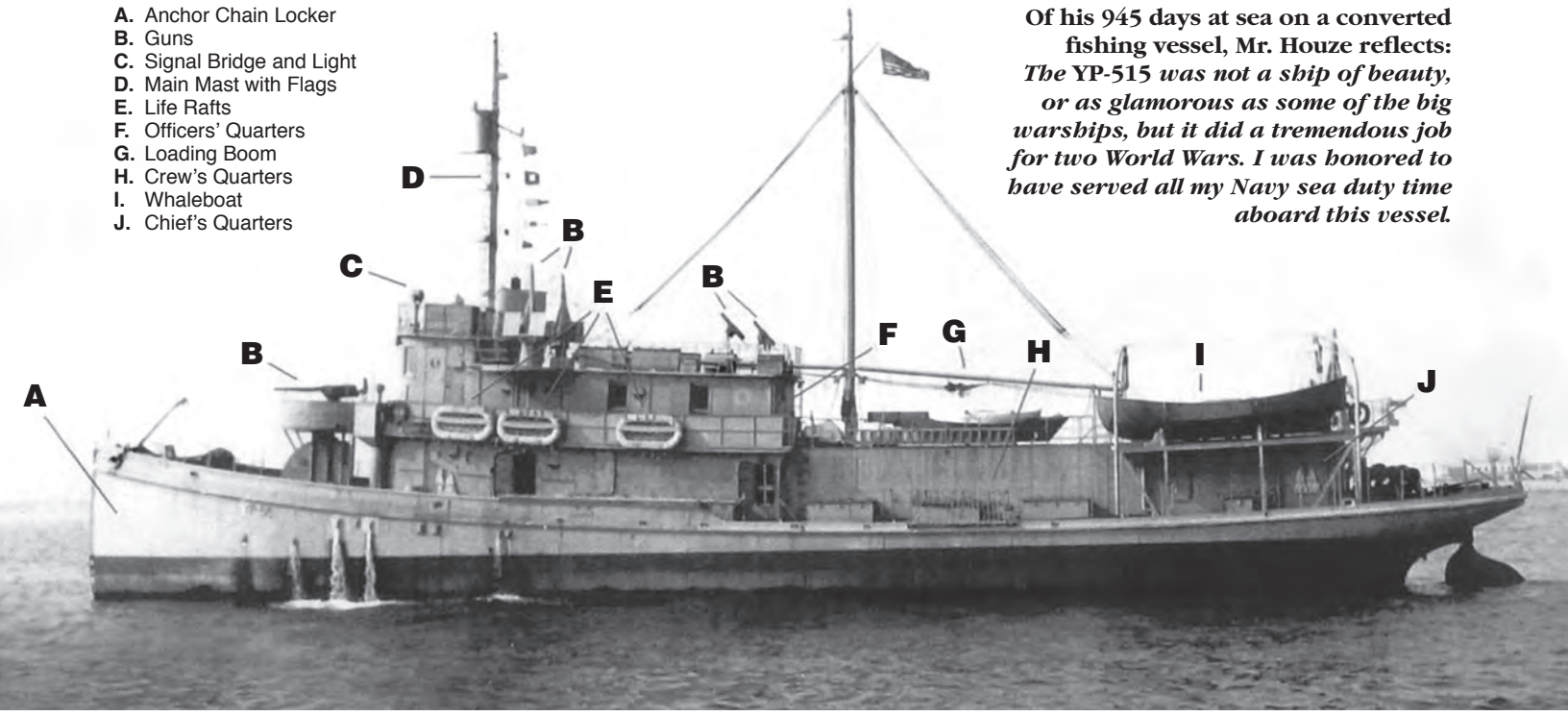


A view of *Commodore* (YP-518) **at her launching at Campbell Shipyard, San Diego, 1942.**
From the American Tunaboat Association, Zolezzi Photographic Collection, MMSD

U.S.S. *Falcon,* YP-515

A. Anchor Chain Locker
B. Guns
C. Signal Bridge and Light
D. Main Mast with Flags
E. Life Rafts
F. Officers' Quarters
G. Loading Boom
H. Crew's Quarters
I. Whaleboat
J. Chief's Quarters

Of his 945 days at sea on a converted fishing vessel, Mr. Houze reflects: ***The* YP-515 *was not a ship of beauty, or as glamorous as some of the big warships, but it did a tremendous job for two World Wars. I was honored to have served all my Navy sea duty time aboard this vessel.***



Above: The photograph of U.S.S. *Falcon,* **YP-515 (built in San Pedro, November 1942), illustrates how the tuna clippers were converted for use by the Navy.**

The illustration, presented by Mr. Felando, is from a collection of* World War II Memories *by Jaime F. Houze, who served aboard the* Falcon *from 1942-1945.

own, to the tuna canners.[7] In addition, the U.S. Army requisitioned two tuna clippers, *Shasta* and *Cape Horn* for use as tugs in the Panama Canal area. One clipper, *Invader*, was used by the Army to supply military forces at Isla Seymour Island, Galapagos Islands (Ecuador) and Cocos Island (Costa Rica).[8]

As a result of the Navy's emergency action in ordering tuna clippers to the port of Balboa, Canal Zone, the fishermen sustained substantial expenses and costs. Claims were filed with the Navy by the owners of requisitioned vessels converted for military use, and by owners of clippers that were requisitioned, but had their military conversion aborted. To resolve these disputes as well as others, the American Fishermen's Tunaboat Association initiated negotiations with Navy officials in San Diego in 1942.[9]

In addition to announcing the requisition of tuna clippers, the Commander of the Panama Canal Naval District ordered the American Tuna Fleet restricted to waters north of 5° North Latitude. This prohibition line, located just north of Culpepper Island of the Galapagos Islands, Ecuador, effectively denied tuna clippers access to one of the most productive tuna fishing grounds in the Eastern Pacific during the winter months of the year. [10]

Tuna Clippers Become Navy Vessels in San Diego

Tony Mascarenhas,[11] a tuna fisherman, recalls his return to San Diego in compliance with the government order:

> ***I certainly have to credit the 11th Naval District for the speed and efficiency with which they moved. I remember coming into the harbor shortly after Pearl Harbor on the tuna clipper* Normandie *and finding, much to my amazement, that some of our fishermen were already in Navy blue and working at various security jobs about the Harbor. Almost immediately the traditionally white-painted hulls of our tuna clippers had already turned Navy grey and the crews were moving aboard.***

Along with the designated YP number and the grey paint came the armament. All clippers were armed with 20-millimeter cannon, 50-caliber machine-guns and also 30-caliber machine-guns of World War I vintage. Also added were 12 depth charges, and the larger vessels were additionally out-fitted with a 75-millimeter cannon on the bow. The Navy provided a well-trained gunner's mate to each vessel to instruct and maintain the armament.[12]

On 16 February 1942, the 11th Naval District reported that tuna fishermen attended a meeting conducted by San Diego Port Director Commander W. J. Morcott, USN (Ret.), at the Naval Reserve Armory.[13] Responding to a request for enlistments after the Navy explained the need to man the requisitioned tuna clippers, six hundred tuna fishermen signed-up, with skippers and engineers receiving warrant ratings, and others given petty officer ratings according to age and experience.

The legal device used by the Navy to initially requisition tuna clippers was a "Bare Boat Charter." The term of the Charter was usually for six months, subject to an option to renew for six months. The Charter provided that the owners of the tuna clippers would be paid for consumable supplies remaining on board. Most tuna clippers had a chapel aboard; its removal was at the owner's discretion. The Charter also provided the following assurance to the owner:

> **Bare Boat Charter requires the vessel to be returned to the owner in a condition at least as good as taken less ordinary wear and tear based on use of the vessel for Naval purposes, or the United States shall pay to the owner an amount for reconditioning to place the vessel in such condition.[14]**

The speedy conversion of the large tuna clippers for military use during 1942 caused concerns about the future economic viability of the California Tuna Industry. It was claimed that "over half" of the Tuna Fleet's tonnage had been lost to the wartime effort.[15] A statistical comparison showed that by the end of 1942, the Tuna Fleet's production capacity had dropped to sixty percent of 1941 production. As of 1 December 1941, the ninety-vessel bait boat fleet was comprised of forty-seven vessels of more than 100' in length. By the end of 1942, only thirteen clippers in the sixty-eight vessel fleet measured greater than 100' in length.[16] However, the last half of 1942 proved to be a bountiful tuna fishing year off the coast and islands of Mexico. During the war years, most of the tropical tuna production came from the existing small tuna bait boats, converted sportfishing vessels, converted sardine seiners, and new bait boats, named "Baby Clippers."

"Yippies" and the Pacific War Frontiers: The Panama Canal Zone Frontier

Within ten days a fleet of sixteen tuna clippers were painted grey and marked with YP number designations as Yard Patrol vessels.[17] They left San Diego harbor on 25 February 1942, along with four sardine purse seiners acquired by the Navy from commercial fishermen operating from San Francisco. The ship's company of the YP tuna clippers was usually of seventeen men, comprised of nine tuna fishermen and eight regular Navy. Their destination was the "Panama Sea Frontier." Most of the YPs were used to help protect the Canal by participating in a picket line formed in the Gulf of Panama (Cape Mala, Panama, to Pinas Point, Colombia). YPs were also sent to the Caribbean side of the Canal. Their use in that area is unknown.



Triunfo, **built in 1937, was photographed on San Diego Bay in 1939, before being requisitioned by the U.S. Navy for the war effort. She would eventually be lost with her crew, estimated at seventeen (with the possible exception of the cook), in May of 1942.**

From the American Tunaboat Association, Zolezzi Photographic Collection, MMSD

Two YPs Lost on Combat Duty: *Triunfo,* YP- 277 and *Yankee,* YP- 345.

In May 1942, a convoy of six tuna clippers left San Diego for the "Hawaiian Sea Frontier." After arrival in Pearl Harbor, two of these YPs carried gasoline and other supplies from Pearl Harbor to Midway Island. Four YPs were used to supply a PT squadron located at French Frigate Shoals, and during this combat duty the first tuna vessel YP was destroyed. The record remains unclear as to whether this loss was caused by a mine hitting the hull, or by an accidental igniting of the gasoline cargo.

An eyewitness account of this loss by a former Chief Engineer in the Tuna Fleet, Bud Leavitt, does not provide a definitive answer. At the time, he was assigned as motor-machinist, 3rd Class, aboard the *Cabrillo*, YP-348. His YP arrived in Pearl Harbor with three other YPs: *Anna M.*, YP-237, *Challenger*, YP-239, and *Triunfo*, YP-277. They were given an anchorage close by the sunken battleship *Arizona*. Leavitt recalled hearing disturbing sounds from the ravaged wreck. A few days later, the YPs were loaded with provisions, high-test gas, and parts for a squadron of fourteen PT boats that were out-of-action and at anchor at La Perouse Pinnacle. This rocky assemblage was some 260 miles southeast of the area now identified as the site of Battle of Midway. The anchored PT boats badly needed the fuel and provisions carried by the "Yippies." The four YPs arrived early in the morning (23 May 1942) and proceeded toward the anchorage, following the instruction to follow one another. This was ordered to avoid a minefield that was protecting the anchorage. The lead vessel was the *Challenger*, followed



B-8 EVENING TRIBUNE SAN DIEGO, CALIFORNIA Wed., Dec. 25, 1963

LONG CAREER—Joe Madruga, 43, in the chart room of his tunaboat, the Saratoga, has been fishing for nearly 30 years and has been through 13 hurricanes. He now owns three boats and is semi-retired.

Fisherman's Life Hailed by Madruga

Successful 30-Year Veteran Loves Sea Despite Hardships

talk to some of the skippers. Get to know them."

But it's tough getting into a crew, Madruga said.

Little Turnover Noted

"There's very little turnover on these boats. It's necessary to have a solid team, one that works well together. It's rough each time we have to break in a new man."

It's even rougher for a fisherman to own his own boats.

"They're expensive to buy and to keep up. And some

The 1963 article from the San Diego Evening Tribune describes Joe Madruga's illustrious career as a fisherman and captain on the tuna clippers. Acknowledging the hardtack existence of the fisherman's life, Joe commented: *This is a rough business. The disadvantages are endless…Tuna fisherman work hard – often 24 to 38 hours without sleep…we're away from our families most of the year….*

These were the laudable qualities the fishermen brought to the war experience.

by the *Cabrillo*, *Triunfo,* and *Anna M.* After the YPs started to move in this formation, Bud Leavitt returned to the engine room. While working, he suddenly felt his vessel jolted by a strong concussion, followed by the noise of a powerful explosion. He ran to the main deck, and saw the *Triunfo* in flames and moving to the left of the formation. He saw that her stern was blown off and that she was sinking. Bud felt then that the *Triunfo* had hit a mine, and that the resulting explosion came from the cargo of high-test gasoline. The other three YPs immediately stopped their movement. Bud Leavitt claims that the speed boat of the *Cabrillo* picked-up one survivor – the cook. At the time of the explosion, the cook was working in the galley. He was blown out of the galley through a small window and out over the deck and into the ocean. Bud claims that no other member of the ship's company survived. After a significant delay, the Commander of the PT squadron was able to safely direct the YPs into the anchorage. As the *Cabrillo* proceeded toward the anchorage, a look-out was stationed in the Crow's Nest. He was armed with a rifle and instructed to shoot at any sighted mine.[18]

Triunfo, **YP-277**

Harry Soares, brother of Carl Soares, did not survive the destruction of the *Triunfo.* Carl contacted his mother early in the morning of 23 May 1942, to announce that he was the father of a first-born son. His mother told him that she had a dream of her son Harry being "in the water and struggling." Days later, she and Carl received official notice of the death of Harry. The date of Harry's death was also the birthday of Carl's son.[19]

Joe Madruga , who was aboard the *Paramount,* YP-289, recalls talking to Pete Dias, the captain of the *Triunfo,* while both vessels were at Pearl Harbor. The *Triunfo* was being loaded with numerous drums of gasoline at the time of the conversation. Joe remembers Pete's disturbing prediction that "he knew he was not coming back." Joe was later advised that the captain of the *Anna M.* retrieved the cap that belonged to Pete.

On 23 July 1942, John R. Bruce was awarded the Navy & Marine Corps Medal for his performance as captain of the *Anna M.*, YP-237. The citation refers to the loss of the *Triunfo* on 23 May 1942, noting:

> **In spite of the danger from exploding gasoline drums, ammunition and depth charges, Bruce turned and proceeded at best speed and succeeded in approaching within 75 feet of the burning vessel. He then lowered a boat and, taking charge himself, entered the area which was either close to or in the mine field. By his cool courage and prompt action he was able to rescue two men and recover one body….[20]**

The total number of fatalities aboard the *Triunfo* is unknown. The San Diego waterfront talk was that only the cook survived. The total number in the ship's company is uncertain, but mostly likely it had a crew of seventeen men.

Yankee, **YP-345**

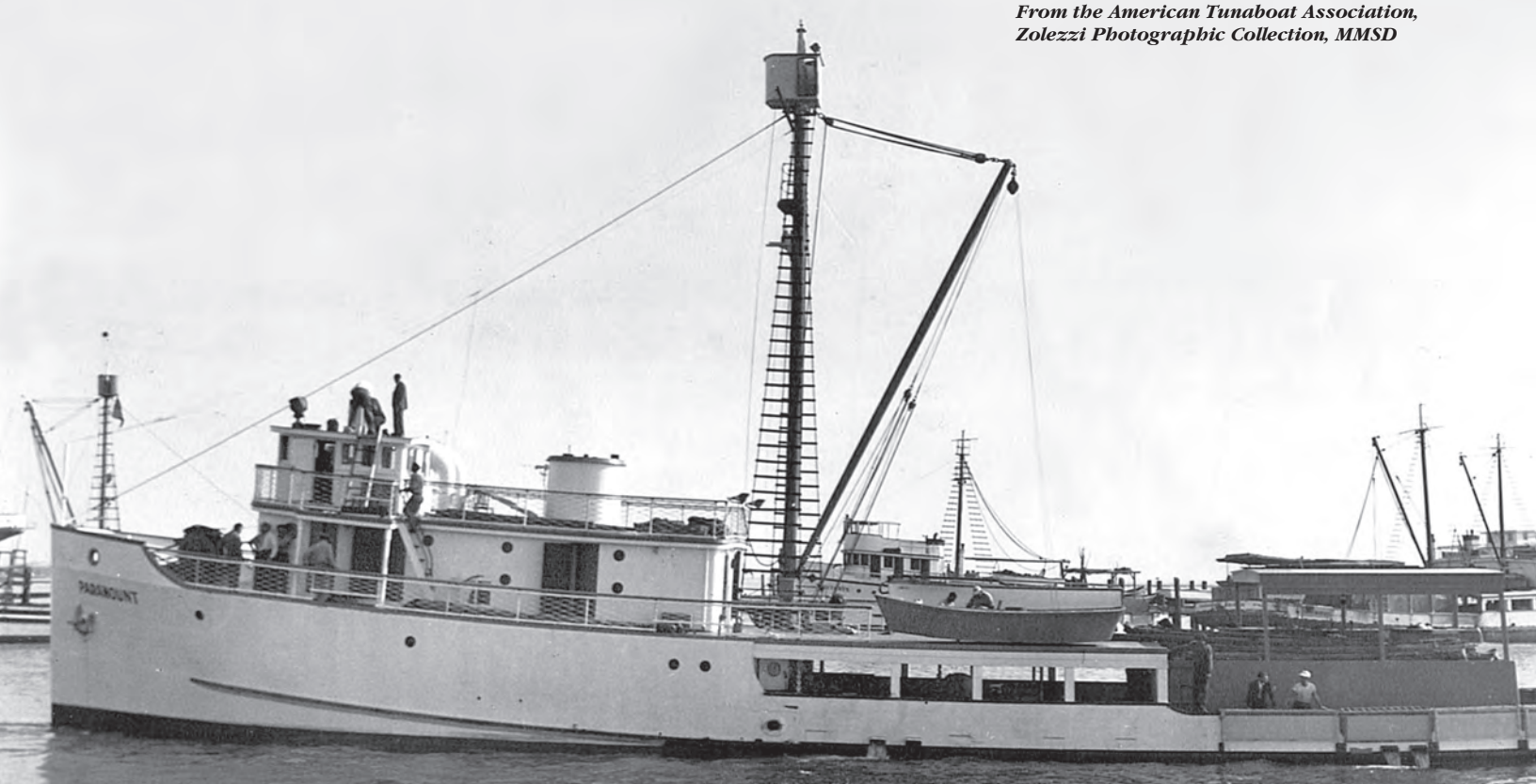
There is very little information about the loss of the second YP on the Hawaiian Sea Frontier. During October 1942, the *Yankee*, YP-345, with seventeen crewmembers, was on a voyage from Pearl Harbor to Midway Island via the French Frigate Shoals. A four page Action Report of the

Commandant, 14th Naval District, dated 1 December 1942, stated that an air-sea search was conducted for four days without success after Radio Honolulu received a dispatch from Radio Melbourne on 31 October 1942: *reporting the receipt of a very weak signal under doubtful call sign to the effect* – 'We are sinking fast 80 miles West Laysan Island.' No trace of wreckage or survivors was discovered. The Report considered two possible causes for the loss: enemy submarine action, or weather. The Report concluded: "that the YP-345 with all hands was lost without trace from causes unknown. Weather was the most probable cause of her loss."

YP-345 was last docked 14 October 1942, and refloated on 17 October. A review of the shipyard repair activity appeared routine, and inspection of "the underbody at the time revealed timbers and planking throughout to have been in good condition, seams tight and caulking sound." It left Pearl Harbor for French Frigate Shoals on 26 October. It arrived at the Shoals on 28 October for discharge of its cargo directly to another naval vessel. The Report noted: "During her stay alongside the YHB-10, nothing unusual was noted by the crew of that vessel, or was any comment reported as having been made as to the seaworthiness or condition of the YP-345 by members of her crew." YP-345 left the same day for Midway Island. The Report noted: "All reports indicate that heavy northerly weather obtained along the route of the YP-345's advance shortly following her departure [from French Frigate Shoals]." The vessel was under the command of Boatswain G. J. Brocato, U.S.N.R., with a crew of seventeen men.

Eighteen-year-old Joe Madruga was the youngest skipper of the San Diego fishing fleet in 1938. One year later, he went into partnership with his brother, Ed, on the fishing vessel *Paramount.* **The** *Paramount,* **requisitioned by the U.S. Navy during the war, became YP-289. She sank near Okinawa in a typhoon in 1945.**

From the American Tunaboat Association, Zolezzi Photographic Collection, MMSD



The Solomon Islands Campaign

Loss of the *Prospect,* YP- 346
9 September 1942, Off Tulagi Island

Richard Tregaskis describes his trip (Chapter VII, in his *Guadalcanal Diary*) on 7 September 1942, aboard the *Prospect*, YP-346, with a group of Colonel Edson's Raiders being transported to the Taivu Point area (Kukum) to attack a "bivouac of a large group of Jap troops – estimated to number from 1,000 to 3,000." [21] The captain was Joaquin S. Theodore, "formerly a Tuna captain on the American West Coast." For Wednesday, 9 September, Tregaskis noted:

> ***At breakfast this morning, I heard that a small group of Jap destroyers or light cruisers had shelled Tulagi – and hit Capt. Theodore's little ship and set it afire. Later in the day, I heard that Capt. Theodore had been wounded through the chest in the course of the engagement. But he had beached his little craft, and saved it from sinking, despite his wounds. I am glad to hear that he is expected to live.***

For Thursday, 10 September, Tregaskis noted: ***This morning we heard that the Japs had shelled Tulagi harbor last night and again hit Capt. Theodore's ship which was still beached.***

John J. Murphy, PFC, U.S.M.C., a crewmember of the *Prospect*, YP-346, awarded a Navy Cross for his actions during the Japanese attack on the vessel, stated:

> ***On the night of 9 Sept. 1942, I was asleep in my bunk next to the engine room… the cook came . . . telling me to dress for general quarters…a searchlight was flashing on our ship…Then I heard some shell fire and I ran up to the gun with PFC Nevle. We couldn't get to the gun because the magazine was hit and shells were exploding inside the magazine, which was right under the gun… hearing the chief in the engine room, ran in and asked if they needed any help… so I helped him . . . The chief told me to take off . . . As I stepped out of the engine room the light flashed in my eyes and I couldn't see. A shell burst alongside the ship and knocked me flat on my face…I felt with my left hand and there seemed to be a big piece of meat gone from my arm…picked up a life jacket…went over the side of the ship which was about 50 yards from shore…***
>
> ***I swam ashore and helped take the wounded Gunners Mate to the "A" Medical Hospital….***

Vincent Battaglia, a San Diego tuna fisherman, enlisted in the Navy on 1 May 1942, and as Machinist Mate, Second Class, served aboard the *Prospect.* His written recollection of the events of the night that his ship was destroyed includes the following:

> ***Today we are attached to a Marine Raider Battalion. This expedition will be a raid on the east side of the Island (Guadalcanal)…. Everything for the landing was timed for a daylight surprise attack. Also aboard is the author of the book* Guadalcanal Diary*, Richard Tregaskis. Four hours after landing, the Marines returned after fighting the Japanese troops in this area. There was very little conversations [sic] between the troops.***

The Marines now are not the same joking men who had come aboard earlier that morning. The Raiders sat around cleaning their weapons, acting as if they just come [sic] home from work. You don't feel like you should question these men. I asked one marine what was it like? His short answer was, **My buddy got hit, looked at me with a surprise look and said, 'Burbank, they got me, and fell dead.'** ***In four hours these were different men…. Twelve hours later I became one of these men.***

…After discharging the Raiders, we were told to return to Tulagi…. The Skipper was warned: **There is an enemy cruiser and two destroyers in the channel.** ***This was not our first race against enemy ships in the channel, it's the first race we lost. We arrived about midnight and almost safely inside the anchorage, when the Japanese cruiser lit up the night with a flare. Searching with his spotlight they found us. The Ship was so close they could not use their main or secondary batteries but used their anti-aircraft guns to shoot at us. These shells on contact spread a lot of shrapnel. YP-346, a wooden ship, had no protection against shells of this type. Captain Theodore is wounded through the chest, but he beached [the]*** **Prospect** ***despite his wounds, one man was lost.***

We prematurely abandoned the ship on orders from the captain. One shell had destroyed the pilot house, a second shell hit aft and the shrapnel had punched holes through ammonia pipes and spread strong ammonia gas throughout the ship. The sailor in the water closest to me was with a seriously wounded bleeding sailor who must have been blown overboard. The body was found two days later. We were at general quarters, all hands had to wear life jackets. When the body was found the body had no life jacket… [The body was that] of Lehman, an Electrician Mate, First Class…. Lehman's general quarters station was a machine gun on the pilot house deck, where the first shell hit.

Ernie Lopez, serving as First Class Boatswain Mate, steered with just the hub of the steering wheel [to beach] the **Prospect, YP-346,** ***this saved the lives of the wounded. Here the Marines were able to remove the wounded. Hawley and I were pulled from the water by Marines in a small boat….***

A nine-ship enemy column, led by the light cruiser *Sendal*, was involved in the loss of the *Prospect,* and the shelling of Tulagi harbor. The *Sendal* was later sunk by aircraft on 2 November 1943, in Empress Augusta Bay, Bougainville, Solomon Islands.

Loss of the *Endeavor*, YP-284 5 October 1942, off Guadalcanal Island

A Report dated 27 October 1942, from the Commander, Naval Activities Cactus-Ringbolt, Advanced Naval Base, described the loss of the *Endeavor*, YP-284, and the U.S.S. *Seminole* on the morning of 25 October 1942:

Both vessels departed Ringbolt on routine trips to Cactus for the purpose of ferrying ammunition, gasoline and troops…. YP-345 landed at its station about 3.5 miles east of Lunga Point at about 0930 hours. Three enemy destroyers were reported headed towards Cactus, causing the *Seminole* and YP-345 to get underway and proceed in the direction of Ringbolt, in the hope of avoiding enemy fire. After the three enemy destroyers bombarded Ringbolt, they proceeded southward and sank both YP-284 and the *Seminole* with gun-fire. YP-284 sank in about 270



YP-514, *American Beauty* **(built 1938), was photographed dockside in San Diego Bay after her conversion.**

From the American Tunaboat Association, Zolezzi Photographic Collection, MMSD

fathoms of water about 5 miles east of Lunga Lagoon. *Seminole* was on the bottom close in to Koli Point, in about 20 fathoms of water. One section of Battery "I" of the Tenth Marines, numbering about 45 Officers and men, were embarked in the YP-284 for passage from Tulagi to Cactus. Of this group, three men were killed.

There were no casualties in the crew of YP-284. Aboard the *Seminole*, one man was killed and two wounded. Lt. Comdr. W.G. Fewel, Commanding Officer of the *Seminole,* reported that when his ship was a *little short of mid-channel, the enemy Destroyers changed course and it was evident that they would cut us off before we could find refuge in Tulagi Harbor. Hence, course was changed and the ship was headed for Longo Channel. At this time, the three enemy Destroyers were shelling the* Trevor *and* Zane *(which were close in to Florida Island) and a YP which was still in mid-channel.* He further explained: *The fact that only one man was lost is attributed to the fact that the majority of the Japanese projectiles passed completely through the ship without exploding*.[22]

YPs Deliver a Turkey Dinner for the Marines on Guadalcanal Island [23]

During October 1942, two Yippies were ordered to New Caledonia, and then to Efate Island, New Hebrides, where each ship was loaded with about 160 tons of frozen turkeys, as well as apples, oranges, walnuts, and other items associated with a Thanksgiving meal. Then, with a Destroyer as escort, two former tuna clippers, *Paramount,* YP-289, and the *Picaroto,* YP-290, headed for Red Beach, Guadalcanal Island. As the Yippies moved off Guadalcanal Island, the *Paramount* had Joe Madruga at the wheel, and his brother Ed was in command. The Destroyer was ahead, maneuvering in a protective fashion. Next

came the *Paramount,* followed by the Picaroto, under the command of Victor Rosa. It was pitch dark, visibility extremely difficult. A location on Red Beach was the designated landing area. As Ed Madruga directed his ship off the coast, the Destroyer was no longer visible. The Yippies found themselves under fire. The shelling started around Lunga Point. Joe Madruga recalls that seven or eight shells were fired at them before they reversed course. To this day, Joe believes that the firing originated from shore and not from friendly warning fire from the Destroyer. After unloading their cargo at Red Beach with the help of Higgins' boats, Joe and Ed were informed that a U.S. airplane had dropped depth charges on a target that was located about two miles starboard of the traveling Yippies. After making this delivery, *Paramount* was ordered back to New Caledonia. Prior to departure, Captain Ed Madruga was informed that an interception by Japanese Navy ships was highly probable. As the YP left Tulagi, a very heavy rainsquall made visibility difficult; Joe recalled thanking the Lord for this timely help from nature. About thirty miles from the entrance to Noumea, New Caledonia, the freighter *Edgar Allen Poe*, traveling a few miles aft of the YP, was severely damaged by a torpedo hit. Joe recalls the memorable passage of his "Yippy" through the ranks of anchored battleships, cruisers, destroyers, and other Navy vessels. As the YP came abeam, each anchored warship lowered her flag. Joe was of the belief that this was a silent salute given to ships returning from the Solomon Islands Campaign.

The *American Beauty*, YP-514, delivered frozen turkeys to the Marines for a Thanksgiving meal during November 1943, at Empress Augusta Bay, in the south end of Bougainville Island, Solomon Islands.

In addition to their logistical duties in supplying ammunition, fuel, food, mail, and transport for the troops fighting on Guadalcanal Island, YPs rescued downed pilots and towed damaged warships. [24]


THE SAN DIEGO UNION: FRIDAY MORNING, JULY 23, 1943

Here are the skippers of the tuna clippers pictured with officers of the 11th Naval district port director's office: (upper row, left to right) Boatswains Victor Rosa and Frank Gonsalves; Ens. Antonio Mascarenhas, Boatswain John Tosso, Machinists Robert Hargreaves, James Burk, Mike Ascuitto, V. I. Simian, W. A. Robbins, and L. E. Wiley, all in the U.S.N.R., (lower row, left to right), Machinist John Turner, Boatswain Edward Madruga, Machinist Manuel Enrique, U.S.N.R.; Comdr. W. J. Morcott, U.S.N., ret.; Lt. J. F. Piotrowski, U.S.N., ret.; Lt. Comdr. J. E. Kemmer, U.S.N. ret.; Boatswains E. Varley and E. Quallin, U.S.N.R.



THE SAN DIEGO UNION: FRIDAY MORNING, JULY 23, 1943

With feet planted firmly on the spot where he landed in September, 1542, the statue of Juan Rodriguez Cabrillo, Portuguese navigator, stands guard over San Diego bay with an armed bluejacket while the descendants of his countrymen fight for the freedom of these shores. The statue was presented to the United States by the Portuguese government last year [1942], marking the 400 anniversary of his landing.

'YIPPIE' BOATS DEFY JAPANESE

★ ★ ★ ★ ★ ★

600 San Diego Fishermen See Battle Service

The Loss of "Yippies" Not Due to Enemy Fire

Five YPs were lost at sea: *California,* YP-235, on 1 April 1943, after fire and beaching in the Gulf of Mexico from an explosion of undetermined origin; *Navigator,* YP-279, 5 September 1943, abandoned while sinking and engine disabled, foundered in heavy weather while enroute to Townsville, Australia; *Cape San Vincent*, YP-280, on 24 April 1946, sank near Saipan Island (Lat.13° 34'N, Long.144° 42'E); *San Salvador,* YP-281, on 9 January 1944 was destroyed by firing from PC-1134 after the foundering vessel could not ride out a Force 9 storm. The crew of nineteen and one dog were rescued near Wallis Island, South Pacific, (Lat.16° 53'S, Long.177° 18'W). The nature of the loss of *Sea Tern,* YP-269, off Baja California, Mexico, during 1944 is unknown.[25]

During October 1945, a typhoon off Okinawa caused the loss of 3 YPs: On 7 October 1945, the *Paramount*, YP-291, and on 9 October 1945, the *Conte Grande,* YP-520. On 9 October 1945, a typhoon caused the grounding of the *Challenger*, YP-239, at Buckner Bay, with no casualties. A Navy Board of Inquiry recommended the destruction of the damaged vessel, which occurred on 22 August 1946.

The Government destroyed 7 YPs: *American Voyager*, YP-287, on 22 August 1946; *Cipango*, YP-504, on 22 August 1946; *Europa*, YP-236, on 10 April 1946, *Falcon,* YP-515, on 18 June 1947; *Queen Amelia*, YP-516, on 12 March 1946; *Queen Elizabeth*, YP-519, and on 8 May 1946, *Yvonne Louise*, YP-282.

The Construction of New Navy YPs

The successful wartime experience of the Yippies in performing their varied tasks in waters off the islands of the South Pacific caused the Navy to build thirty wood-hull vessels based upon the Tuna Clipper design. The Navy recognized the unique value of the Yippies in being able to transport troops, gasoline, ammunition, perishable foods, frozen meats and fowl, and mail, to navigate within shallow atolls, float over minefields, tow damaged ships, and rescue downed pilots. Their usage in the South Pacific far exceeded the original plan of the Navy to limit their use to minesweepers. Their practicality explains why the Yippies were nicknamed ***the Pork Chop Express***, or ***Errand Boys of the Pacific***, or ***the Portuguese Navy.***

Each of the thirty newly constructed wood-hull Navy YPs was of 128' in length, 14' draft, and powered with a 500 H.P. diesel main engine. They were built during 1945, two each by fifteen different shipyards located in California, Oregon, and Washington. Commencing in 1947, twenty-four of the newly built Navy YPs were sold by the Government to persons who converted them for entry into the U.S. Tuna Fleet as tuna bait boats or purse seiners.

Former Tuna Clippers, Serving the Military, Come Home

Of the thirty-three surviving tuna clippers acquired by the Navy or Army, only two were not sold to their previous owners. The *Cabrillo*, YP-348, was not purchased because of its worn-out and damaged condition; it was sold to a UK citizen of Hong Kong. The disposition by the Navy of *Fishermen II*, YAG-5, (ex-*Mindora*) is unknown; it never returned to the American tuna fishery.

TUNA CLIPPERS IN MILITARY SERVICE DURING WW II RETURNED TO THE TUNA FISHERY

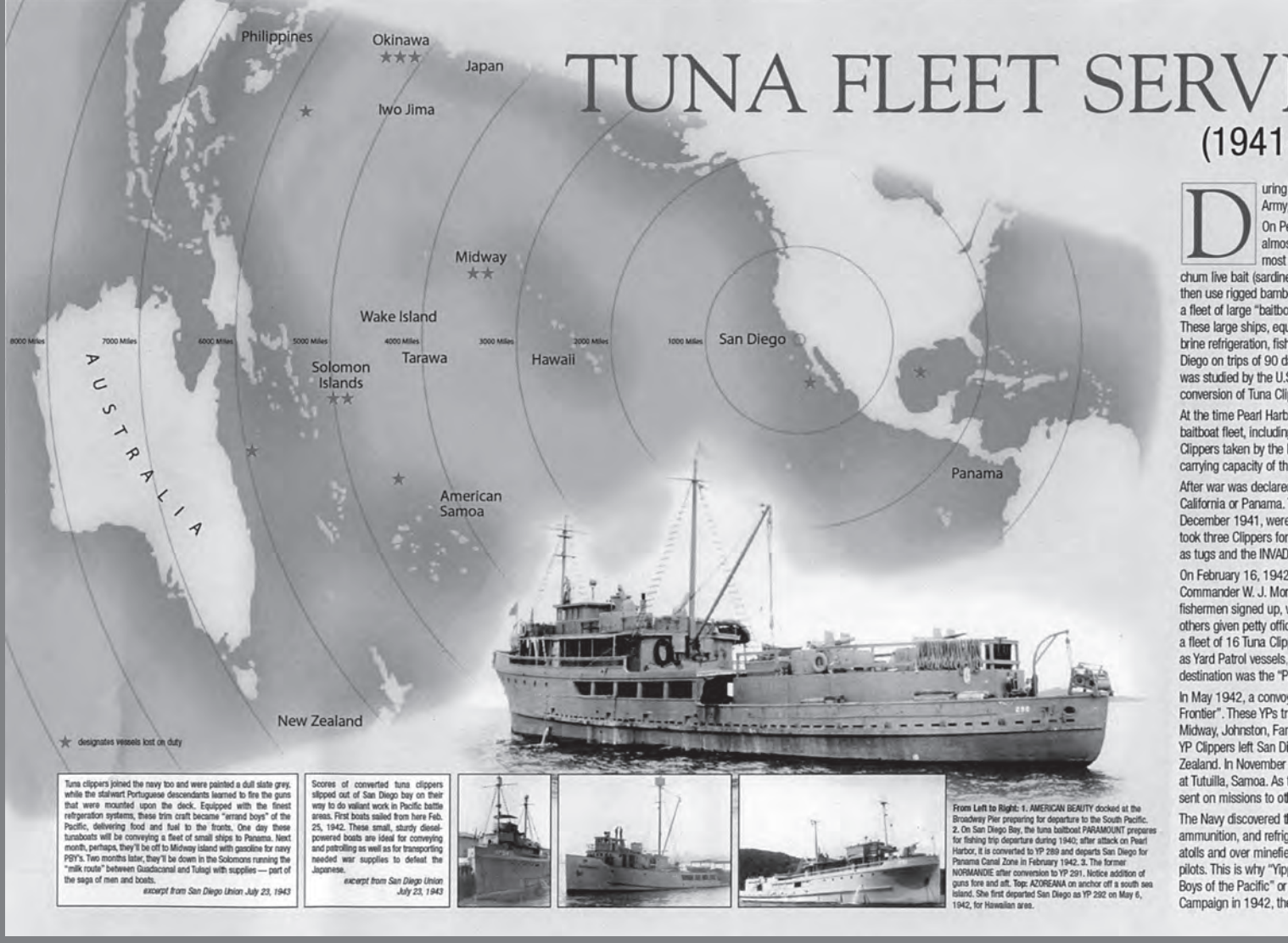
ALERT	YP-264	*NORTHWESTERN*	YP-285
AMERICAN BEAUTY	YP-514	*PATRIA*	YP-233
ANNA M.	YP-237	*PICAROTO*	YP-290
AZOREANA	YP-292	*QUEEN MARY*	YP-349
BELLE OF PORTUGAL	YP-321	*SANTA INES*	
CAPE HORN		*SAO JOAO*	YP-234
CHICKEN OF THE SEA	YP-522 (YDG-3)	*SHASTA*	
CITY OF SAN DIEGO	YP-283	*SEA WOLF*	YP-411
COMMODORE	YP-518	*ST. ANN*	YP-517
CONTE BIANCO	YP-240	*ST. GEORGE*	YP-286
EMMA R.S.	YP-263	*ST. THERESE*	YP-503
INVADER		*STAR OF THE SEA*	YP-347
LIBERTY	YP-278	*THEODORE FOSS*	YP-262
MADEIRENSE	YP-238	*VICTORIA*	YP-350
NORMANDIE	YP-291	*VINDICATOR–KILDEER*	Amc-21, IX-192
		WESTERN PACIFIC	YP-287

ADDITIONAL SOURCES

For articles with photos printed in two San Diego Newspapers concerning Tuna Clippers serving as YPs: By John Bunker, *San Diego Tribune*, 26 February (Sec. B-1), 27 February (Sec. B-1), and 01 March 1957 (A-10); By Joe Brown, *San Diego Union*, 10 July 1960 (A-1, A-46); by Tim Shepard, *San Diego Union*, 06 August 1957 (G-2); By Ken Hudson, *San Diego Union*, 05 June 1977(B-1, B-8). See full page article and photos, "'Blue Water' Men of Tuna Fleet Write Saga in Fight For Democracy," *San Diego Tribune*, 23 July 1943, (B-1).

For articles concerning the impact of WW II on the Tuna Fleet published in the *Pacific Fisherman:*

"Fishing Is Interrupted in Southern California, January 1942, p. 15; "Tuna Landings in December Are Above Expectations," p. 23; "Navy Charters Clippers For Patrol Duty," p.24.
Yearbook 1942, p.159, December 1941 Activities.
"Problems of Wartime Operation Hamper Tuna Industry," February 1942, p. 15.
"Navy Converts Tuna Clippers For Emergency War Service," p. 16.
"Four Purse Seiners Taken by Navy," Note: *Democracy, Pioneer, John B.* and *Sea Tern*. p. 64.
"Removal of Alien Fishermen Presents Problem on Pacific Coast," March 1942, p. 15.
"Naval Conversion of Tuna Boats Threatens So. California Industry," p. 16.
U.S. Navy Photo of *Azoreana,* YP-292, May 1942, p. 31.
Photo of Purse Seiner *Pacific Fisherman*, YP- 86, June 1942, p. 12.
Photo of San Diego Tuna Clipper Captains holding Warrant commissions in the U.S. Navy, June 1942, p.19.
"Compensation for Navy Requisitions Satisfactory," July 1942, p. 23.
Photo and article, "Manuel Freitas Home from the Wars," February 1944, p. 27.



NOTES

1 For extensive citation and explanation of Navy documents supporting this statement see: Daniel M. Shapiro, 1993 Treatise, University of San Diego, "The Pork Chop Express San Diego's Tuna Fleet, 1942-1945."

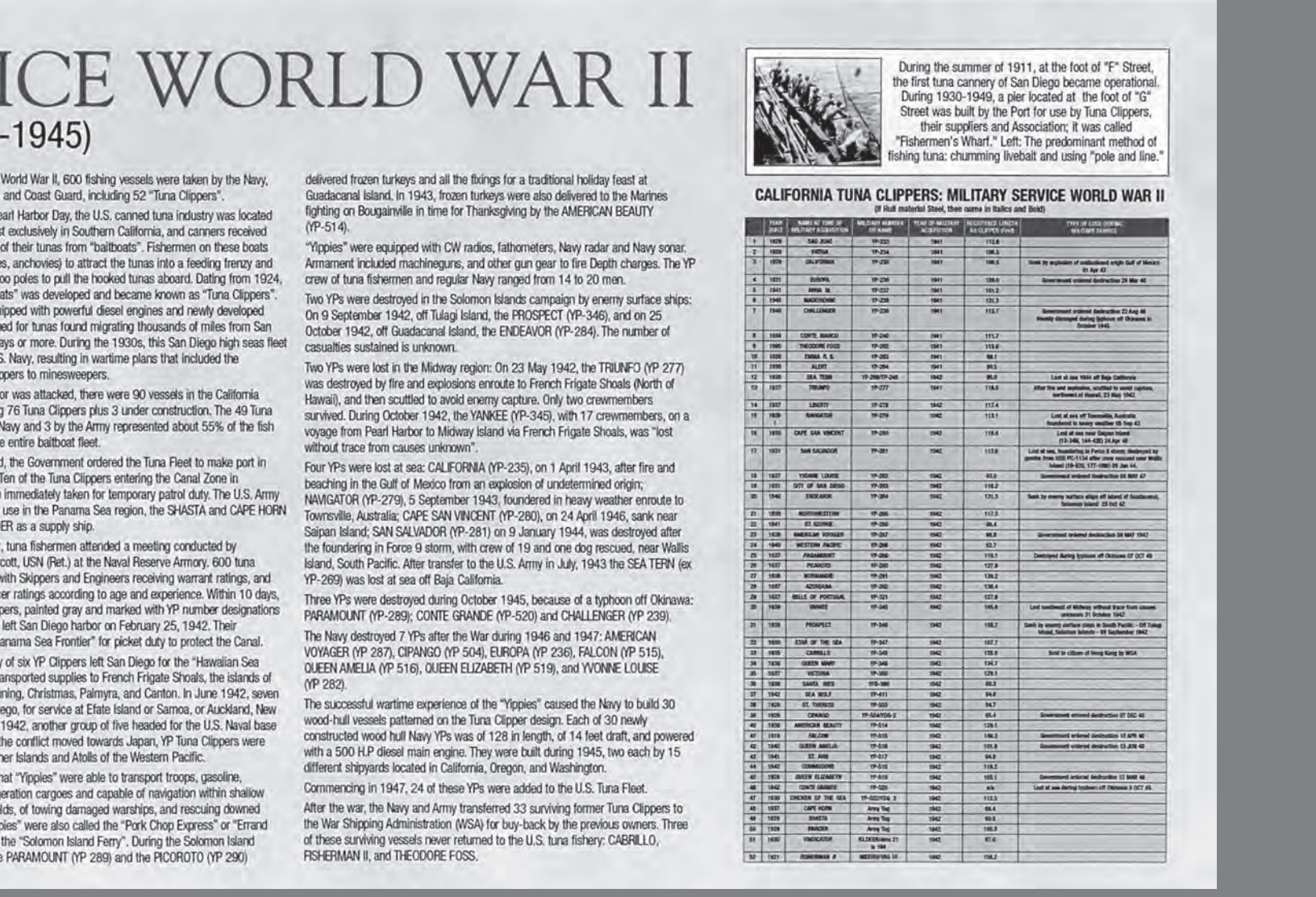
2 "Wartime Regulations Placed on San Diego Fleet," *Pacific Fisherman*, (September 1940), Vol. 38, No. 11, p. 26.

3 "California Tuna Bait Boats," *Pacific Fisherman*, Yearbook, January 1942, Vol. 40, No. 2, p.159. Of the 90 vessels listed in the fleet, 63 were of 90' registered length or greater; 40 of these 63 clippers served during WW II. As to the 27 listed bait boats of less than 90' registered length, 2 were later acquired by the Army. This listing did not include the idle *Falcon* (148.3') (ex-U.S.N. Tug *Tadousac*), *Fisherman II* (156.2') (ex UK Yacht *Kallisto*), and *Theodore Foss* (113.6') (ex. Tug *Shelikof*), and the *Vindicator* (97') (ex *Rainbow,* ex *Jenny Rose*), a former clipper converted to a seiner based in San Pedro. Nor did the listing include the hulls of 9 tuna clippers being built or ready for delivery for San Diego tuna fishermen in 1942. Five of these clippers, all greater than 90' in length, were later acquired from the owners by the Navy and served as YPs: *Commodore*, *Conte Grande*, *Queen Amelia*, *Sea Wolf* and *St. Ann*. The four clippers, all less than 90' in length, not taken by the military were: *Monarch, Sea Lion, Sunset* and *Viking*.

4 After the war, these two minesweepers, *Ruff,* Amc 59, and *Rhea*, Amc 58, were purchased from the Navy and converted to tuna clippers–*American Belle* (O/N 256152) and *Elena* (O/N 256534) respectively.

5 *Pacific Fisherman*, Yearbook, January 1942, Vol. 40, No. 2, p. 159. See also: "Removal of Alien Fishermen Presents Problem on Pacific Coast," *Pacific Fisherman,* (March 1942), Vol. 40, No. 4, p. 15.

6 Name, YP Number, (Date of requisition): *Anna M.,* YP-237 (12 Dec 1941); *California*, YP-235 (14 Dec 1941); *Challenge*, YP-239 (11 Dec 1941); *Conte Blanco*, YP-240 (18 Dec 1941); *Europa*, YP-236 (12 Dec 1941); *Madeirense*, YP-238 (17 Dec 1941); *Patria*, YP-234 (9 Dec 1941); and *Sao Joao*, YP-233 (24 Dec 1941). All of these vessels, excepting the *California* and *Anna M.,* were placed in Navy Service and given a YP number on 12 January 1942. The *Anna M.* was given its YP number on 4 January 1942, on its maiden fishing voyage when "acquired by requisition under Bare Boat Charter, 6 month renewal option." The *California* was placed in service as a YP on 17 December 1941.



ICE WORLD WAR II
-1945)

World War II, 600 fishing vessels were taken by the Navy, and Coast Guard, including 52 "Tuna Clippers".

earl Harbor Day, the U.S. canned tuna industry was located st exclusively in Southern California, and canners received of their tunas from "baitboats". Fishermen on these boats es, anchovies) to attract the tunas into a feeding frenzy and oo poles to pull the hooked tunas aboard. Dating from 1924, ats" was developed and became known as "Tuna Clippers". ipped with powerful diesel engines and newly developed ed for tunas found migrating thousands of miles from San ays or more. During the 1930s, this San Diego high seas fleet S. Navy, resulting in wartime plans that included the ppers to minesweepers.

or was attacked, there were 90 vessels in the California g 76 Tuna Clippers plus 3 under construction. The 49 Tuna Navy and 3 by the Army represented about 55% of the fish e entire baitboat fleet.

d, the Government ordered the Tuna Fleet to make port in Ten of the Tuna Clippers entering the Canal Zone in immediately taken for temporary patrol duty. The U.S. Army use in the Panama Sea region, the SHASTA and CAPE HORN ER as a supply ship.

, tuna fishermen attended a meeting conducted by cott, USN (Ret.) at the Naval Reserve Armory. 600 tuna vith Skippers and Engineers receiving warrant ratings, and er ratings according to age and experience. Within 10 days, pers, painted gray and marked with YP number designations left San Diego harbor on February 25, 1942. Their anama Sea Frontier" for picket duty to protect the Canal.

y of six YP Clippers left San Diego for the "Hawaiian Sea ansported supplies to French Frigate Shoals, the islands of ning, Christmas, Palmyra, and Canton. In June 1942, seven ego, for service at Efate Island or Samoa, or Auckland, New 1942, another group of five headed for the U.S. Naval base he conflict moved towards Japan, YP Tuna Clippers were her Islands and Atolls of the Western Pacific.

hat "Yippies" were able to transport troops, gasoline, eration cargoes and capable of navigation within shallow lds, of towing damaged warships, and rescuing downed ies" were also called the "Pork Chop Express" or "Errand the "Solomon Island Ferry". During the Solomon Island e PARAMOUNT (YP 289) and the PICOROTO (YP 290) delivered frozen turkeys and all the fixings for a traditional holiday feast at Guadacanal Island. In 1943, frozen turkeys were also delivered to the Marines fighting on Bougainville in time for Thanksgiving by the AMERICAN BEAUTY (YP-514).

"Yippies" were equipped with CW radios, fathometers, Navy radar and Navy sonar. Armament included machineguns, and other gun gear to fire Depth charges. The YP crew of tuna fishermen and regular Navy ranged from 14 to 20 men.

Two YPs were destroyed in the Solomon Islands campaign by enemy surface ships: On 9 September 1942, off Tulagi Island, the PROSPECT (YP-346), and on 25 October 1942, off Guadacanal Island, the ENDEAVOR (YP-284). The number of casualties sustained is unknown.

Two YPs were lost in the Midway region: On 23 May 1942, the TRIUNFO (YP 277) was destroyed by fire and explosions enroute to French Frigate Shoals (North of Hawaii), and then scuttled to avoid enemy capture. Only two crewmembers survived. During October 1942, the YANKEE (YP-345), with 17 crewmembers, on a voyage from Pearl Harbor to Midway Island via French Frigate Shoals, was "lost without trace from causes unknown".

Four YPs were lost at sea: CALIFORNIA (YP-235), on 1 April 1943, after fire and beaching in the Gulf of Mexico from an explosion of undetermined origin; NAVIGATOR (YP-279), 5 September 1943, foundered in heavy weather enroute to Townsville, Australia; CAPE SAN VINCENT (YP-280), on 24 April 1946, sank near Saipan Island; SAN SALVADOR (YP-281) on 9 January 1944, was destroyed after the foundering in Force 9 storm, with crew of 19 and one dog rescued, near Wallis Island, South Pacific. After transfer to the U.S. Army in July, 1943 the SEA TERN (ex YP-269) was lost at sea off Baja California.

Three YPs were destroyed during October 1945, because of a typhoon off Okinawa: PARAMOUNT (YP-289); CONTE GRANDE (YP-520) and CHALLENGER (YP 239).

The Navy destroyed 7 YPs after the War during 1946 and 1947: AMERICAN VOYAGER (YP 287), CIPANGO (YP 504), EUROPA (YP 236), FALCON (YP 515), QUEEN AMELIA (YP 516), QUEEN ELIZABETH (YP 519), and YVONNE LOUISE (YP 282).

The successful wartime experience of the "Yippies" caused the Navy to build 30 wood-hull vessels patterned on the Tuna Clipper design. Each of 30 newly constructed wood hull Navy YPs was of 128 in length, of 14 feet draft, and powered with a 500 H.P diesel main engine. They were built during 1945, two each by 15 different shipyards located in California, Oregon, and Washington.

Commencing in 1947, 24 of these YPs were added to the U.S. Tuna Fleet.

After the war, the Navy and Army transferred 33 surviving former Tuna Clippers to the War Shipping Administration (WSA) for buy-back by the previous owners. Three of these surviving vessels never returned to the U.S. tuna fishery: CABRILLO, FISHERMAN II, and THEODORE FOSS.

During the summer of 1911, at the foot of "F" Street, the first tuna cannery of San Diego became operational. During 1930-1949, a pier located at the foot of "G" Street was built by the Port for use by Tuna Clippers, their suppliers and Association; it was called "Fishermen's Wharf." Left: The predominant method of fishing tuna: chumming livebait and using "pole and line."

CALIFORNIA TUNA CLIPPERS: MILITARY SERVICE WORLD WAR II

(If Hull material Steel, then name in Italics and Bold)

	YEAR BUILT	NAME AT TIME OF MILITARY ACQUISITION	MILITARY NUMBER OR NAME	YEAR OF MILITARY ACQUISITION	REGISTERED LENGTH AS CLIPPER (Feet)	TYPE OF LOSS DURING WW II IMPLEMENTED
1	1929	SAN JUAN	YP-233	1941	112.8	
2	1928	PATRIA	YP-234	1941	106.5	
3	1929	CALIFORNIA	YP-235	1941	106.5	Sunk by explosion of undetermined origin Gulf of Mexico 01 Apr 43
4	1931	EUROPA	YP-236	1941	128.0	Government ordered destruction 29 Mar 46
5	1941	ANNA M.	YP-237	1941	101.2	
6	1940	MADDENNIK	YP-238	1941	121.3	
7	1940	CHALLENGER	YP-239	1941	113.7	Government ordered destruction 22 Aug 46 Heavily damaged during typhoon off Okinawa in October 1945.
8	1934	CONTE. MARCO	YP-240	1941	111.7	
9	1940	THEODORE FOSS	YP-262	1941	113.6	
10	1928	EMMA R. S.	YP-263	1941	98.1	
11	1936	ALERT	YP-264	1941	90.5	
12	1939	SEA TERN	YP-269/YP-240	1942	95.0	Lost at sea 1944 off Baja California
13	1937	TRIUNFO	YP-277	1941	119.5	After fire and explosion, scuttled to avoid capture, northwest of Hawaii, 23 May 1942.
14	1937	LIBERTY	YP-278	1942	117.4	
15	1939	NAVIGATOR	YP-279	1942	113.1	Lost at sea off Townsville, Australia foundered in heavy weather 05 Sep 43
16	1933	CAPE SAN VINCENT	YP-280	1942	119.4	Lost at sea near Saipan Island (13-24N, 144-43E) 24 Apr 46
17	1931	SAN SALVADOR	YP-281	1942	112.8	Lost at sea, foundering in Force 9 storm; destroyed by gunfire from USS PC-1134 after crew rescued near Wallis Island (19-32S, 177-18W) 09 Jan 44.
18	1937	YVONNE LOUISE	YP-282	1942	93.0	Government ordered destruction 06 MAY 47
19	1931	CITY OF SAN DIEGO	YP-283	1942	116.2	
20	1940	ENDEAVOR	YP-284	1942	131.3	Sunk by enemy surface ships off island of Guadacanal, Solomon Island 25 Oct 42
21	1939	NORTHWESTERN	YP-285	1942	117.5	
22	1941	ST. GEORGE	YP-286	1942	96.4	
23	1936	AMERICAN VOYAGER	YP-287	1942	98.8	Government ordered destruction 08 MAY 1947
24	1940	WESTERN PACIFIC	YP-288	1942	92.7	
25	1937	PARAMOUNT	YP-289	1942	110.1	Destroyed during typhoon off Okinawa 07 OCT 45
26	1937	PICAROTO	YP-290	1942	127.9	
27	1936	NORMANDIE	YP-291	1942	126.2	
28	1937	AZOREANA	YP-292	1942	130.4	
29	1937	BELLE OF PORTUGAL	YP-321	1942	127.9	
30	1936	UNIVE	YP-345	1942	105.6	Lost southeast of Midway without trace from causes unknown 31 October 1942
31	1936	PROSPECT	YP-346	1942	105.7	Sunk by enemy surface ships in South Pacific - Off Tulagi Island, Solomon Islands - 09 September 1942
32	1930	STAR OF THE SEA	YP-347	1942	107.7	
33	1935	CARRILLO	YP-348	1942	126.8	Sold to citizen of Hong Kong by WSA
34	1936	QUEEN MARY	YP-349	1942	134.7	
35	1937	VICTORIA	YP-350	1942	129.1	
36	1936	SANTA INES	YFD-386	1942	88.3	
37	1942	SEA WOLF	YP-411	1942	94.8	
38	1926	ST. THERESE	YP-503	1942	94.7	
39	1928	CIPANGO	YP-504/YDG-2	1942	85.4	Government ordered destruction 07 DEC 48
40	1936	AMERICAN BEAUTY	YP-514	1942	129.1	
41	1919	FALCON	YP-515	1942	146.2	Government ordered destruction 10 APR 48
42	1942	QUEEN AMELIA	YP-516	1942	101.8	Government ordered destruction 13 JUN 48
43	1941	ST. ANN	YP-517	1942	94.8	
44	1942	COMMODORE	YP-518	1942	118.2	
45	1924	QUEEN ELIZABETH	YP-519	1942	105.1	Government ordered destruction 12 MAR 48
46	1942	CONTE GRANDE	YP-520	1942	n/a	Lost at sea during typhoon off Okinawa 9 OCT 45
47	1939	CHICKEN OF THE SEA	YP-522/YDG-3	1942	113.5	
48	1937	CAPE HORN	Army Tug	1942	98.4	
49	1929	SHASTA	Army Tug	1942	93.5	
50	1928	INVADER	Army Tug	1942	100.3	
51	1930	VINDICATOR	KLDEB/Aleta 21 to 1964	1942	97.0	
52	1921	FISHERMAN II	MERRIMAN VI	1942	154.2	

The Tuna Fleet Service World War II, 1941-1945, Memorial plaque is located along Tuna Lane, at the foot of G Street, San Diego bayside.

The following 8 clippers were ordered by the Navy to leave the port of Puntarenas, Costa Rica, and locations on the high seas, and enter the Canal Zone: *Alert,* YP-264 (16 Dec 1941); *America*; *Cape Horn*; *Emma R. S.*, YP-263 (12 Dec 1941); *Invader*; *San Salvador*, YP-281 (23 Feb 1942); *Shasta*; *St. Therese*, YP-503 (1942); *Theodore Foss*, YP-262 (19 Dec 1941).

7 *Pacific Fisherman*, (February 1942), Vol. 40, No. 3, p. 15. The four clippers used in this operation were the following: *Queen Mary*, *North America, Navigator*, and *Star of the Sea*.

8 Other YPs were transferred by the Navy to the Army for use in the Canal Zone: *Belle of Portugal*, YP-321, acquired by the Navy on 27 Feb 1942, by a Bare Boat Charter and sent to the Panama Canal Zone, departing San Diego on 28 March 1942, was transferred to the Army on 21 July 1942. It was purchased by the Navy from the owner on 29 January 1944, and returned to the Navy by the Army on 15 September 1944.

9 "Navy Converts Tuna Clippers For Emergency War Service." *Pacific Fisherman*, (February 1942), Vol. 40, No. 3, p. 16.

10 "Problems of Wartime Operations Hamper Tuna Industry," *Pacific Fisherman*, (February 1942), Vol. 40, No. 3, p. 15.

11 Antonio (Tony) Mascarenhas was assigned as an officer aboard the *Normandie*, YP-291 (23 Feb 1942). By telephone on 17 February 1942, Commander W. J. Morcott sought approval "to efficiently man the sixteen tuna boats which are being sent to the Fifteenth Naval District," requesting approval to "enlist M2 Reserves in the first pay grade, the maximum being three chief petty officers per vessel," and authority "to enroll warrant machinists, boatswains, and two warrant officers per vessel." Memo dated 17 February 1942, Commandant's Office, 11th Naval District, San Diego, California. ND11/A6-1.

12 Newsletter (July 1981), Portuguese Historical Center, Boletim 20, p. 22. To effectively communicate at sea, tuna clippers were equipped with CW sets. To efficiently fish, tuna clippers were equipped with fathometers. The Navy retained this equipment under the Bare Boat Charters of Tuna Clippers, along with sextants, chronometers, charts, and other navigational equipment.

13 Press Release, 11th Naval District, Public Relations Office, San Diego Office: Serial SD(a)-890(43). See: "Navy Charters Clippers For Patrol Duty," *Pacific Fisherman* (January 1942), Vol. 40, No. 1, p. 24.

14 Memo by Commander W. J. Morcott, "BARE BOAT CHARTER OF TUNA VESSELS" dated 17 February 1942, ND11/L8-3(a), Serial B(SD)-948. After the YPs proved their unique value in the Pacific conflict, the Navy acquired ownership by purchase. After a YP was no longer in Navy service and not destroyed, the War Shipping Administration arranged for her final disposition.

15 "Naval Conversion of Tuna Boats Threatens So. California Industry," *Pacific Fisherman*, (March 1942), Vol. 40, No. 4, p. 16.

16 "Tuna Fleets Play Their Parts in War," *Pacific Fisherman,* Yearbook (January 1943), Vol. 41, No. 2, p. 183.

17 *American Voyager,* YP-287; *Azoreana,* YP-292; *Cape San Vincent*, YP-280; *City of San Diego,* YP-283; *Endeavor,* YP-284; *Liberty*,YP-278; *Navigator*, YP-279; *Normandie*, YP-291; *Northwestern*, YP-285; *Paramount*,YP-289; *Picaroto*, YP-290; *San Salvador*, YP-281; *St. George*, YP-286; *Triunfo*, YP-277; *Western Pacific,* YP-288; *Yvonne Louise*, YP-282.

18 Tony Mascarenhas, Newsletter (August 1981), Portuguese Historical Center, Boletim 21, pp. 18, 20. Captain Mascarenhas reported that he was unable to obtain a complete listing of the former tuna fishermen aboard the *Triunfo* at the time of its loss, but did identify the following: combat duty – Peter Dias, Frank Martin, Harry Soares, and Manuel "Dazzle" Victor. See: Newsletter (July 1981) Portuguese Historical Center, Boletim 20, p. 22. Joaqim Vierra Silveira, received a warrant machinist rating when he enlisted in February 1942; his death aboard the *Triunfo* was reported by the Navy in July 1942. See: *Pacific Fisherman*, August 1942, Vol. 40, No. 10, p. 57.

19 Personal conversation, Captain Carl Soares, 22 September 1995.

20 U.S. Naval File Records, YP-237 (ex *Anna M.*). Naval Historical Center, Washington Navy Yard, Washington, D.C.

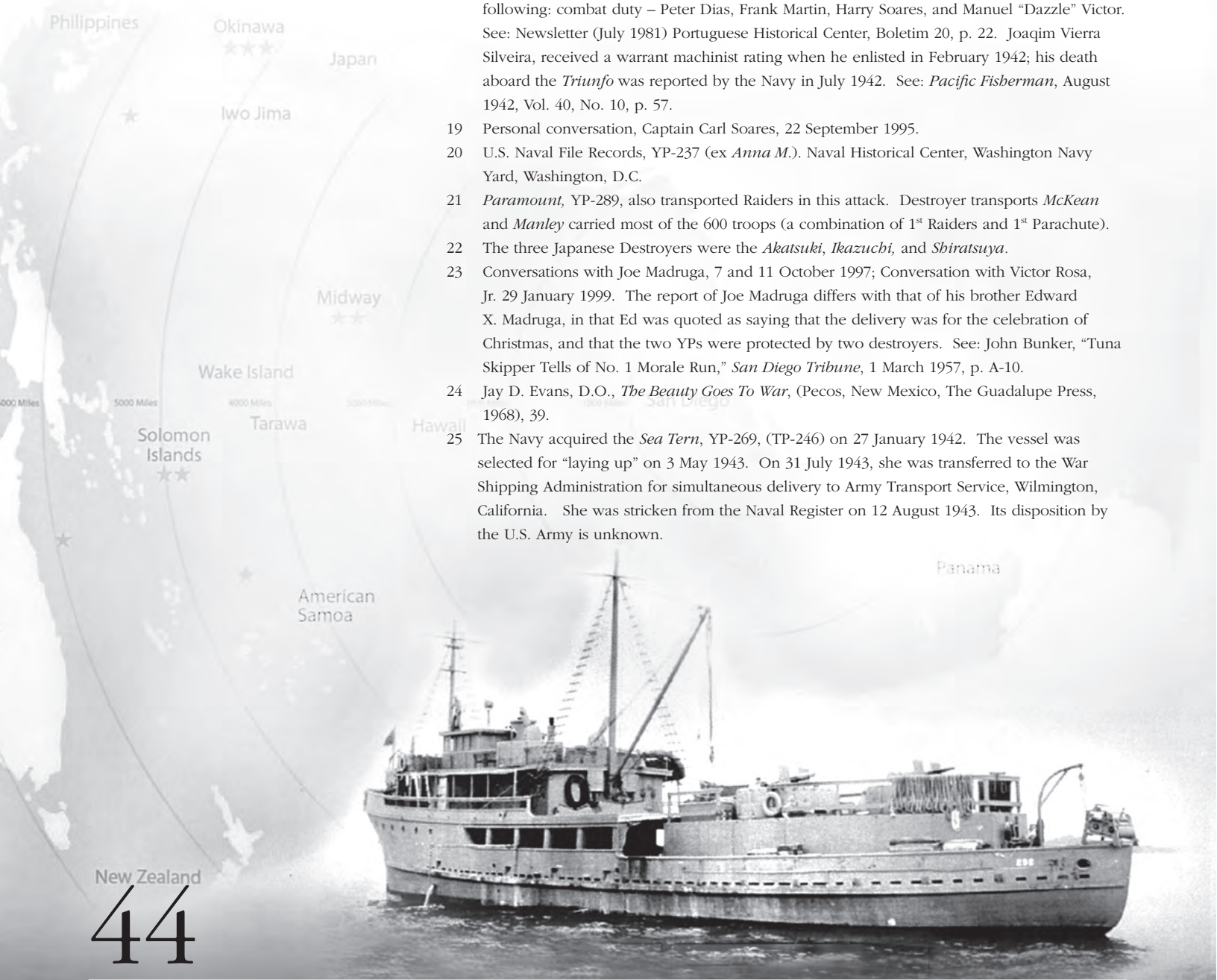
21 *Paramount,* YP-289, also transported Raiders in this attack. Destroyer transports *McKean* and *Manley* carried most of the 600 troops (a combination of 1st Raiders and 1st Parachute).

22 The three Japanese Destroyers were the *Akatsuki*, *Ikazuchi,* and *Shiratsuya.*

23 Conversations with Joe Madruga, 7 and 11 October 1997; Conversation with Victor Rosa, Jr. 29 January 1999. The report of Joe Madruga differs with that of his brother Edward X. Madruga, in that Ed was quoted as saying that the delivery was for the celebration of Christmas, and that the two YPs were protected by two destroyers. See: John Bunker, "Tuna Skipper Tells of No. 1 Morale Run," *San Diego Tribune*, 1 March 1957, p. A-10.

24 Jay D. Evans, D.O., *The Beauty Goes To War*, (Pecos, New Mexico, The Guadalupe Press, 1968), 39.

25 The Navy acquired the *Sea Tern*, YP-269, (TP-246) on 27 January 1942. The vessel was selected for "laying up" on 3 May 1943. On 31 July 1943, she was transferred to the War Shipping Administration for simultaneous delivery to Army Transport Service, Wilmington, California. She was stricken from the Naval Register on 12 August 1943. Its disposition by the U.S. Army is unknown.



CALIFORNIA TUNA CLIPPERS: MILITARY SERVICE WORLD WAR II *(Hull of Steel: name in Italics and Bold)*

	YEAR BUILT (Converted to Clipper)	OFFICIAL NUMBER	NAME AT TIME OF MILITARY ACQUISITION (Former names-year of change)	ORIGINAL NAME OF CLIPPER	MILITARY NUMBER OR NAME	YEAR OF MILITARY ACQUISTION	YEAR[1] STRICKEN NAVY REGISTRY	LENGTH AS CLIPPER (Reg.Feet)	TYPE OF LOSS DURING MILITARY SERVICE
1	1929	229-055	SAO JOAO		YP-233	10 Dec1941	26 FEB 46	113.6	
2	1928	227-930	PATRIA	MARINER[2]	YP-234	09 Dec1941	05 DEC 45	106.5	
3	1928	227-916	CALIFORNIA		YP-235	17 Dec1941	28 JUL 43	106.5	SUNK BY EXPLOSION OF UNDISCLOSED ORIGIN IN GULF OF MEXICO – 01 Apr 1943
4	1931	230-599	EUROPA		YP-236	12 Dec1941	12 APR 46	109.0	Government Ordered Destruction 28 Mar 1946 Destruction 28 Mar 1946
5	1941	241-025	ANNA M.		YP-237	10 Dec1941	31 JUL 46	101.2	
6	1940	239-285	MADEIRENSE (Judy S.-1950)		YP-238	17 Dec1941	26 FEB 46	131.3	
7	1940	239-790	CHALLENGER [3]		YP-239	22 Dec1941	21 JAN 46	113.7	Government Ordered Destruction 22 Aug 1946 HEAVILY DAMAGED DURING TYPHOON OFF OKINAWA IN OCTOBER 1945
8	1934	233-61	CONTE BIANCO (Far Famed-1952)		YP-240	18 Dec1941	05 JUN 46	111.7	
9	1900 (1928)	116-967	THEODORE FOSS	Ex-Tug SHELIKOF	YP-262	19 Dec1941	30 MAR 45	113.6	
10	1928	277-920	EMMA R. S.		YP-263	12 Dec1941	16 SEP 44	89.1	
11	1930	239-140	ALERT		YP-264	16 Dec1941	1948 [4]	90.5	
12	1930	229-535	SEA TERN	MUSKETEER [5]	YP-269 TP-246	26 Jan1942	11 AUG 43 [6]	95.0	LOST AT SEA After transfer to Army in 1944
13	1937	236-289	TRIUNFO		YP-277	17 Feb1942	24JUN 42	116.0	After fire and explosion, scuttled to avoid capture, east of Hawaii, 23 May 1942
14	1937	236-946	LIBERTY (Sun Splendor-1949)		YP-278	17 Feb1942	19 JUN 46	117.4	
15	1929	228-951	NAVIGATOR		YP-279	17 Feb1942	20 SEP 43	113.1	LOST AT SEA off Townsville, Australia foundered in heavy weather 05 Sep 1943
16	1935	234-078	CAPE SAN VINCENT		YP-280	17 Feb1942	08 MAY 46	116.4	LOST AT SEA near Saipan Island 24 Apr 1946
17	1931	230-541	SAN SALVADOR		YP-281	17 Feb1942	22 JAN 43	112.8	LOST AT SEA, foundering in Force 9 storm; destroyed by gunfire from USS PC-1134 after crew rescued near Wallis Island 09 Jan 1944.
18	1937	236-451	YVONNE LOUISE		YP-282	17 Feb1942	25 FEB 47	93.0	GOVERNMENT ORDERED DESTROYED 08 MAY 1947
19	1931	231-091	CITY OF SAN DIEGO		YP-283	17 Feb1942	26 FEB 46	116.2	
20	1940	239-595	ENDEAVOR		YP-284	17 Feb1942	16 APR 43	131.3	Sunk by enemy surface ships off Guadacanal, Solomon Islands 25 Oct 1942
21	1930	230-063	NORTHWESTERN (Evelyn R.-1952)		YP-285	17 Feb1942	25 FEB 46	117.0	
22	1941	240-387	ST. GEORGE		YP-286	17 Feb1942	30 DEC 46	90.4	
23	1939	238-878	AMERICAN VOYAGER		YP-287	17 Feb1942	30 DEC 46	96.8	GOVERNMENT ORDERED DESTROYED 08 MAY 1947
24	1940	240-118	WESTERN PACIFIC		YP-288	17 Feb1942	19 JUL 46	92.7	
25	1937 (1940)	236-731	***PARAMOUNT*** [7]		YP-289	17 Feb1942	01 NOV 45	110.1	DESTROYED DURING TYPHOON OFF OKINAWA 07 OCT 1945
26	1937	235-886	PICAROTO		YP-290	17 Feb1942	19 DEC 45	127.9	
27	1938	237-622	NORMANDIE		YP-291	17 Feb1942	12 MAR 46	139.2	
28	1937	236-851	AZOREANA		YP-292	17 Feb1942	21 JAN 46	130.4	
29	1937	235-878	BELLE OF PORTUGAL		YP-321	27 Feb1942	12 MAR 46	127.9	
30	1939	238-205	YANKEE		YP-345	27 Mar1942	10 JAN 43	105.9	LOST SOUTHEAST OF MIDWAY WITHOUT TRACE FROM CAUSES UNKNOWN 31 October 1942
31	1938	237-063	PROSPECT		YP-346	01 Apr 1942	15 APR 43	108.7	Sunk by enemy surface ships in South Pacific-Off Tulagi Island, Solomon Islands- 09 September 1942
32	1930	230-081	STAR OF THE SEA	DEFENDER[8]	YP-347	03 Apr1942	21 JAN 46	107.7	
33	1935	234-152	CABRILLO		YP-348	07 Apr1942	19 JUL 46	126.0	Sold to citizen of Hong Kong by WSA
34	1938	237-603	QUEEN MARY		YP-349	22 Apr1942	21 JAN 46	134.7	
35	1937	236-144	VICTORIA (Queen Victoria-1947) (Sun Victoria-1950)		YP-350	17 Apr 1942	12 MAR 46	129.1	
36	1936	235-822	SANTA INES		YFD-386	1942	27NOV44[9]	80.3	
37	1942		SEA WOLF[10]		YP-411	14 Apr1942	03 JAN 46	94.8	
38	1928	227-720	ST. THERESE (Sea Witch-1948) (Marine Greyhound-1949)		YP-503	n/a	14 OCT 44	94.7	
39	1929	238-121	CIPANGO		YP-504 YDG-2	13 JUL1942	19 DEC 45	95.4	GOVERNMENT ORDERED DESTRUCTION 07 DEC 1945
40	1938	237-720	AMERICAN BEAUTY		YP-514	31 JUL1942	01 MAY 46	129.1	
41	1919 (1942)	239-057	***FALCON*** [11]	Ex-USN Tug TADOUSAC	YP-515	03 Aug1942	0I MAY 46	148.3	GOVERNMENT ORDERED DESTRUCTION 10 APR 1946
42	1942	241-414	QUEEN AMELIA		YP-516	25 Jul1942	10 JUN 47	101.8	
43	1941	241-330	ST. ANN (Sun Venus-1949)		YP-517	05 Aug1942	21 JAN 46	94.8	
44	1942		COMMODORE [12]		YP-518	03 Aug1942	15 AUG 46	119.2	
45	1928	227-834	***QUEEN ELIZABETH*** (*Santa Cruz*-1931)	***ORIENT***	YP-519	04 Aug1942	20 MAR 46	105.1	GOVERNMENT ORDERED DESTRUCTION 12 MAR 1946
46	1942		CONTE GRANDE [13]		YP-520	08 Aug1942	28 NOV 45	n/a	LOST AT SEA DURING TYPHOON OFF OKINAWA- 9 OCT 1945
47	1930	229-723	CHICKEN OF THE SEA		YP-522 YDG -3	05 Aug1942	02 JUN 45	113.5	
48	1937	236-897	CAPE HORN (Sea Lady-1949)		Army Tug	1942	n/a	68.4	
49	1929	228-928	SHASTA		Army Tug	1942	n/a	90.5	
50	1929	228-950	INVADER		Army Tug	1942	n/a	109.3	
51	1931	229-339	VINDICATOR[14] (Jenny Rose-1937)	RAINBOW	KILDEER Amc 21 IX 194	1942	1944	97.0	
52	1921 (1936)	234-179	***FISHERMEN II***	Ex-Yacht-UK Flag KALLISTO	YAG 15 Ex MINDORO	30 July 1942	19 DEC 45	156.2	

NOTE: Information on the casualties of the following vessels: CALIFORNIA, TRIUNFO, NAVIGATOR, SAN SALVADOR, ENDEAVOR, YANKEE, and PROSPECT obtained from "Casualties, Navy and Coast Guard Vessels, WW II, 7 December 1941-01 October 1945, Internet web site: www.history.navy.mil. Naval Historical Center, Department of the Navy, 901 M. Street, SE, Washington Navy Yard, Washington, D.C. 20374-5060. Information also available from the US Treasury publication, "Merchant Vessels of the United States" various years prior to 1950.

NOTE: Files of documents copied at Washington Navy Yard, Building 200. 35 files copied, numbers 1-36, except that of Item 11, YP-264 ex-ALERT. This file was not found in the Vessel Box. My visit occurred on 13-14 September 2005. Assisted by Navy Library Director Glenn Helm and Naval Historian Dr. Timothy Francis.

San Diego Fisheries Timeline



Courtesy San Diego Historical Society Photographic Archives

1850s-1890s
Whaling Station first at Ballast Pt. then moved to North Island in 1873

1880s
Local whaling came to an end

1850s-1890s
Chinese dominate San Diego Fishery

1890s
Japanese, Italian, Portuguese most active in local fishing

1903
Sardines disappear, find new resource–albacore.

1906
In the wake of the San Francisco earthquake, Monterey fishing boats head south and begin to appear on S.D. Bay.

1909
First small cannery built at La Playa

1910
S.D. fishermen fish in Baja California waters

1911
Albacore canning at Pacific Tuna Canning Co.

1919
Bahia San Quintin–Bernstein family starts cannery in Baja California

1922
Moved cannery to Cedros Island, Baja California Sur

1920s
Local sportfishing gets underway using barges

1924
First series of large bait boats built by Japanese

1926
Portuguese fisherman M.O. Medina builds first U.S. long-range tuna clipper, *Atlantic.*

1926-1940
approx. 140 tuna clippers in the Eastern Tropical Pacific

1930
Ed Ghio heads American Fishermen's Tunaboat Assoc., forerunner to American Tunaboat Assoc.

1930s
Sportfishing booms with long-range trips

1930s
S.D. Tuna Fleet outpaces Japanese catch. S.D. Tuna clippers built for longer-range trips.



Courtesy San Diego Historical Society Photograph Archives

1917
U.S. enters WW I

1929-1939
Great Depression

1934
Fish and Wildlife Coordination Act authorizes NOAA Fisheries Service to collect fisheries data on environmental decisions which affect living marine resources

1940s
Scripps Institution of Oceanography and the Bureau of Commercial Fisheries begin to study the impact of fishing on the Eastern Tropical Pacific.

1941-1945
Tuna boats used for World War II service

1930s

Tariff Act of 1930 causes oversupply of canned tuna from Japan. Seizures of S.D. boats fishing in Mexican waters. Licensing fees and tariffs levied by the Mexican government against U.S. fishing boats discourages fishing in Mexican waters.

1935-1938

San Diego heralded as the "Tuna Capital of the World."

1941-1945

Tuna clippers requisitioned by the military for the war effort.

1946 Fishing resumes after the war.

1949

Inter-American Tropical Tuna Commission, based in La Jolla, California, created to study tunas and make conservation recommendations.

1950s

Post-War policies favor Japan's canned tuna imports much to the detriment of the local industry.

American Tunaboat Assoc. negotiates international fishing rights and related matters (tariffs, etc.).

1956

1956 *Anthony M* uses first all-nylon tuna purse seine and Puretic "power block."

1957

Southern Pacific first U.S.-based clipper conversion to a purse seiner (pole fishing to net fishing) using nylon net and power block. A wave of conversions of S.D. bait boats to purse seiners (75 vessels)

1959

Only 2 canneries left in San Diego due to foreign competition. S.D. produced 89 million cans of tuna (down from 190 million in 1949).

1961

163 seiners make up U.S. fleet

1968

Observers (from NMFS) on board seiners to gauge dolphin mortality, reported as very high.

1970

San Diego fisherman Harold Medina develops the Medina Panel, used with the back-down method allows dolphins to escape from the net.

1970s-1980s

Supply of foreign-caught tuna increases

1982

U.S. regulations force S.D. fleet to explore fishing in the Western Pacific.

1988

Last cannery closes. Foreign interests buy U.S. purse seiners. Foreign fleet continues to fish in ETP.

1990s

38 S.D. purse seiners move to the Western Pacific.

2004

Joe De Santi takes *La Diana* out for her last day of fishing.

2008

The last of the San Diego fleet, 13 purse seiners, fish in the Western Pacific.

Sportfishing continues...



From the American Tunaboat Association, Zolezzi Photographic Collection, MMSD



Photograph by Ted Walton

1972

The Marine Mammal Protection Act regulates interaction with marine mammals.

1973

Endangered Species Act protects species determined to be threatened or endangered.

1976

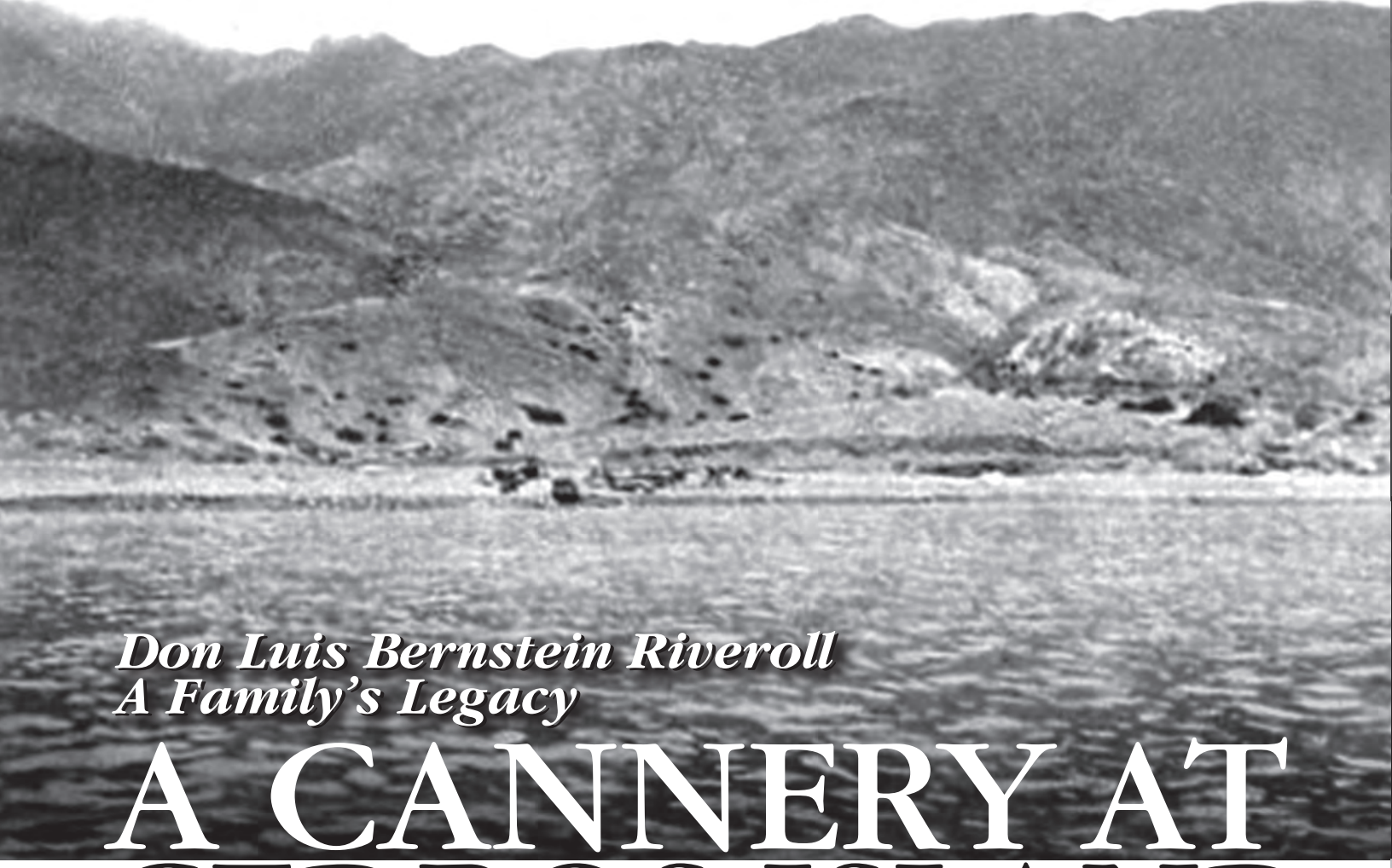
Magnuson-Stevens Fishery Conservation and Management Act governs conservation and management of ocean fishing (amended through 2006).

1990

Dolphin Protection Consumer Information Act sets labeling standards for "dolphin safe" canned tuna.

1997

Amendment to MMPA -International Dolphin Conservation Program Act aims to reduce incidental dolphin mortalities in the ETP tuna purse-seine fishery.



Don Luis Bernstein Riveroll
A Family's Legacy

A CANNERY AT CEDROS ISLAND

By Fabio Martinez

Above: This photograph dated 1922, in the handwriting of Don Luis Bernstein, shows the inhospitable terrain surrounding the original site of the fishing camp on Cedros Island. A spring was found at the top of the mountain, offering a valuable resource for survival. Every aspect of survival was left to the ingenuity of the inhabitants to fabricate and implement on an island bereft of supplies.

This invaluable photograph from the Don Luis Bernstein Riveroll Archives remains in the care of the author, Fabio Martinez.

People of many nationalities have contributed to the growth of the commercial fishing industry in Baja California. Among them were Chinese, Japanese, Americans of Italian and Portuguese descent, and others. Each group left its imprint. Historians have acknowledged the varying nationalities that exploited the shores and offshore islands of the California Bight off the Vizcaino Desert, while overshadowing the contributions of those who lived there, who struggled to develop the most remote and rugged areas — the Mexicans.

Don Luis Bernstein Riveroll and three of his brothers, Guillermo, Carlos and Enrique, with an investment of twenty-five hundred dollars, started fishing and canning operations in San Quintin Bay, Baja California, in December 1919. The fishery exploited was abalone, which had a profitable market in Japan and China. All their supplies for the cannery and the shipment of abalone went by sea to Ensenada. The abalone was destined for export to the Orient.

San Quintin Bay is a deep-water bay, but sandbars at its mouth make it difficult and dangerous for ships to get in and out. Cedros Island had potable water from springs in the mountains, an abundance of abalone and a deep-water harbor, which made it the ideal place to relocate. In May of 1922, the Bernstein brothers moved to Cedros Island and set up a fishing camp. The original camp that the Bernstein's chose for their fishing base is the site of the cannery that was still there when I visited in 1979.

(Text continued on page 48)



Courtesy Fabio Martinez

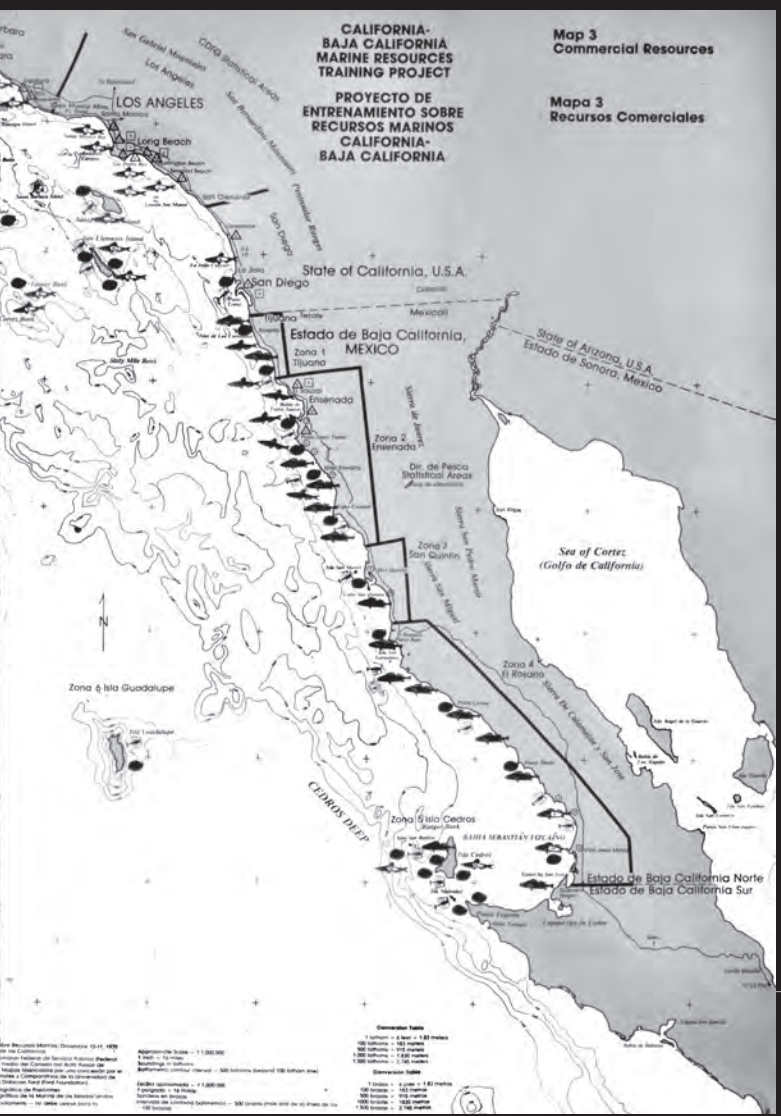


Above: Don Luis Bernstein Riveroll was photographed by Fabio Martinez at his home in San Quintin, Baja California, Mexico, in 5 May 1979. He was 79 years old at the time and passed away just five months after this initial interview.

Fabio A. Martinez is a retired adjunct professor of geography at San Diego City College. Between 1979 and 1986, he did extensive demographic research on the commercial fishing cooperatives and fishing camps along the Vizcaino Cape coastline from Punta Eugenia to Punta Abreojos in Baja California Sur including the islands of Cedros, Natividad and San Benitos. He presented his findings at the Sixth International Oral History Conference at St. John's College, Oxford, England, in September 1987, and Wolfson College, Cambridge University, in May 2006.

In addition, he has published articles in *Campo Libre: Journal of Chicano Studies,* the Asociación Cultural de las Californias, Symposium XVII, *Uso y Preservacion de los Recursos Biologicos Marinos y de Zonas Aridas,* PAHO Pan American Health Organization and The Maritime Museum of San Diego's Journal *Mains'l Haul.*

"Don Luis Bernstein Riveroll a Family's Legacy" is the demographic history of events surrounding the growth of Mexican commercial fisheries along the Vizcaino coastline in Baja California, Mexico. An abundant natural resource of commercial fisheries, mainly abalone and spiny lobster from the California Bight, provided the source that supported the growth of fourteen fishing Cooperatives along the Vizcaino coastline and the Islands of San Benito, Natividad, and Cedros.

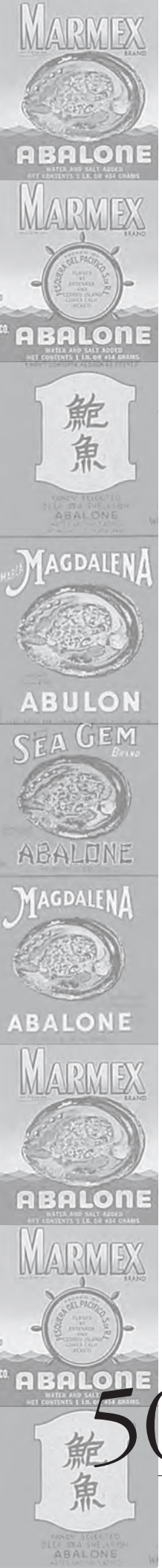


In his book *Baja California al Dia* (1924), Aurelio Vivanco noted that all commercial fishing in Baja California was done by foreigners (Japanese) and that all the abalone was sent to the Orient. Vivanco said the only Mexican cannery, located in Bahia San Quintin, was the property of the Bernstein Riveroll family of Ensenada. The brothers, Luis, Carlos, Enrique and Guillermo, built the cannery in 1919, after which they started to fish, process, can and transport the product to Ensenada for export to the Orient and the United States.

On 1 May 1922, the Bernstein brothers found a more suitable location on Cedros Island and transferred their canning operations there. By 1923, employment in the canneries in the Pacific Coast triggered an internal migration from the interior of Baja California Sur to the Pacific Coast and later to Cedros Island. Almost eighty percent of all those who migrated to the coast were from San Ignacio, Santa Rosalia, and Mulege.

By 1930, the Bernstein brothers had moved their fishing grounds and opened canneries in Bahia Tortugas, Cabo San Lucas and Bahia Magdalena. Their trademarks were OCEAN GARDEN, CALMEX and MARMEX.

The camps where the fishermen lived became towns: Punta Abreojos, La Bocana, San Hipolito, Bahia Asuncion, San Roque, Bahia Tortugas, Cedros Island, Isla Natividad and Benitos Island. The people who migrated were farmers and ranchers attracted to the area by the ease of finding well-paying work. The growth and development of the towns, roads, airstrips, and of an industry that today employs thousands of persons from Cabo San Lucas to Ensenada, gradually became a completely Mexican operation.



(Text continued from page 46)

The town grew eventually around the original site of the cannery on Cedros. The cannery and the Cooperativa Buzos y Pescadores are the only sources for employment on the island. Abalone fishing was so plentiful and the market so profitable that by 1925 the *CALMEX, MARMEX and OCEAN GARDEN* Company (the trademarks of the cannery), expanded operations to Cabo San Lucas, and in 1930, to Bahia Tortugas. The economic depression of the 1930s found the Bernsteins overextended in credit, forcing them to close and sell the canneries to Mexican investors in Ensenada.

Cedros Island's major source of employment in 1979 through 1980 was, and is today, the Empacadora (Cannery) de Productos Pesqueros Paraestatales de Ensenada, Baja California. They engage in commercial fishing for sardines, tuna, lobster and the canning of abalone and other marine products for shipment to Ensenada. The fishing is done by the Cooperativa Pescadores Nacionales de Abulon. (Almost all commercial fishing in this area is done by Mexican fishing cooperatives.)

I met Luis Bernstein Riveroll in Ensenada, 29 April 1979, after I had presented a paper to the Asociación Cultural de las Californias Symposium XVII, "An Economic and Demographic Survey of Cedros Island and Islas San Benitos."

Don Luis suggested that there were gaps in my data about the demography of Cedros Island and the origins of the fishing industry and cannery there.

There was so much material that a brief conversation with him would not be enough to cover the subject. I asked for further talks and he agreed. Don Luis graciously allowed the following interview at his home in San Quintin. This is the story of Baja California's commercial fishing industry and the legacy of the Bernstein family who founded the cannery at Cedros Island and was responsible for the development of fourteen fishing cooperatives.

Don Luis Bernstein Riveroll Interview
San Quintin, Baja California
6 May 1979

By Fabio A. Martinez

Professor Martinez's (designated FM) ***questions are in italic.***

FM: ***Don Luis, can you tell us where you were born?***
LB: **I was born August 25, 1899, in Ensenada, Baja California.**

FM: ***And your parents names…***
LB: **[My father's name was] Maximilliano Bernstein.**

FM: ***Where was he born?***
LB: **Nuremberg, Germany.**

FM: ***And when did he leave?***
LB: **After the Franco-Prussian War in 1882, he went to New York City. Immigrants from Europe went to the United States looking for work. I do not know why he did not stay in the USA; relatives of his did stay in New York.**

The most logical reason why he came, once we arrived in the Pacific [Coast], he knew of mineral property, which my maternal grandfather to be [Teodoro Riveroll, Governor Territory Baja California Sur, 1861-1863] was the principal stockholder at the mine [French-owned Compagnie Du Boleo] El Boleo, in Santa Rosalia. And with my father's interest in mining, in development, promotion, exploration, he went to see my grandfather and there he met my grandmother. It would have been a remote chance to have known her, also a friend of his, also of German origin, both married cousins.

My mother's name was Guadalupe Riveroll [born in Mulege, Baja California Sur].

FM: ***She was of Catalan origin?***

LB: **Yes, because it is a Catalan name. My maternal grandfather came from San Andres, Tuxtla, in Veracruz. He is the only one with that name from that region who came to this place. The rest of his family remained in the interior of Mexico.**

FM: ***How many brothers and sisters do you have?***

LB: **Three sisters, four brothers; today, two sisters and I survive. My sister, who is older than I am, probably lives in Los Angeles.**

FM: ***Education?***

LB: **I have to go back to the various places that the family lived. In Ensenada, I recall attending kindergarten and when we moved to Cananea, Sonora, I attended a Mexican school and for a little while an American school.**

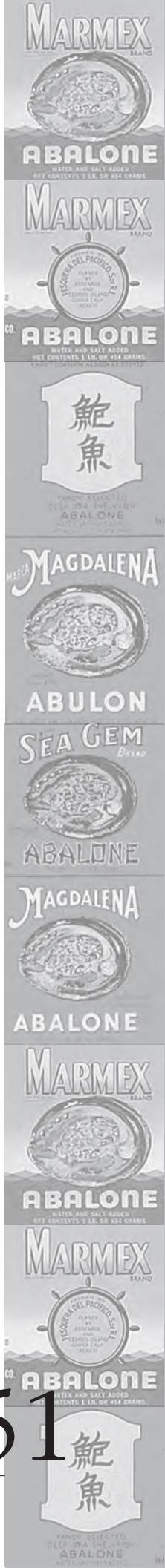
Then we moved to Mexico City. There I attended a Jesuit school. I was there from early 1911 to 1914. Subsequently, the family came back to this area and in September 1914, I went to *San Diego High School.* Later, we moved to Los Angeles and I attended a local high school in Los Angeles. I finished high school in 1917.

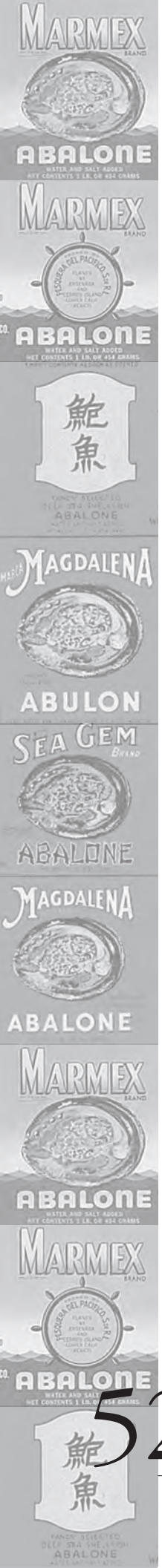
I did not go to college. Our small group of fellow students, who planned to go to Berkeley, broke up, we lost contact. Some were drafted, some enlisted, so we lost contact.

As it used to be in those days, after you could read and write, you were asked to contribute to the family support. So that is what I did and could not go further ahead in school.

FM: ***What was your father doing that you made all these moves?***

LB: **First of all Ensenada, which was the family home, was completely dead. There was no activity whatsoever; in Sonora, mining [American-owned, The Consolidated Copper Company of Cananea] was very active so first my brothers went there, then my father. In 1911, when the Revolution became quite serious**





in that area, [violent labor strikes] for safety or convenience, my mother, sisters and one brother [and I] went to Mexico City to live.

We hadn't been there very long before the situation became quite serious too. [La Decena Tragica was a military coup that lasted ten days in Mexico City]. In 1913, we decided to go back to California, always in mind to go back to Lower California for work and surviving. So we have always been here ever since.

FM: ***What were your impressions of the States when you were young?***

LB: **First what intrigued me was the large size of the cities, transportation, streetcars that I had never seen before. I had seen automobiles, not streetcars and the buildings …some four or five stories. Trains were a novelty to me, but principally automobiles.**

FM: ***But you saw automobiles in Mexico City.***

LB: **But very few. In Mexico City, I was so young and so tied up that I did not realize I was even there. Although I did visit places of interest. We would go to the bullfights and smoke and do considerable mischief. And in the school in Mexico City only two students were from Baja California, out of four or five hundred.**

FM: ***Did you ever feel the pull of Lower California as a source for your regional identity?***

LB: **I feel it makes us a little bit different from the rest of the people because geographically, and the matter of provincialism. We are very provincial here. They asked me if I am Mexican and I said: *No, I am from Lower California.* We carry provincialism very far and we like it, it's good for us.**

FM: ***But you aren't…I don't see you as provincial from your upbringing and the background that you have from many of the people that I know who live here. Do you seem European, Mexican?***

LB: **Again, I feel Lower Californian first. The rest is secondary.**

FM: ***What does being* Lower Californian *mean to you. Can you describe that?***

LB: **First of all, Baja California is not a place for weak people. You have to be quite rugged to survive here. Maybe not now, but before it was quite essential. If you were not rugged and willing to take quite a lot of punishment, you could not survive here. That is why very few people lived here and it is almost not second nature, but first nature.**

FM: ***You need to survive.***

LB: **And enjoying the eternal situation that you have…nothing is easy here. Water, which everyone takes for granted, here is a tremendous gift. Very valuable. Other places they take water**

for granted. Along that same line of thought, everything else falls in place. Things are not easy here. Today a lot of improvements, but before you had to have something special in the way of determination to stay here and more so to amount to something.

FM: ***What was that extra special quality for you?***

LB: **First of all, to create something new, not to have a little restaurant, not to have a grocery store on top of another grocery store. In fact, I would say speaking of the time of a certain period, the challenge was there. All you had to do was to go out and get a hold of it, be creative. Before you know any activity, you had to start from scratch, unless you were just being repetitive and having just a grocery store in front of another grocery store. And I am very happy that I was able to participate in this creative effort.**

FM: ***I would like you to go into what you feel is Baja California, what you feel your life has been here, the historical perspective that I am looking for here is the feeling for the land, the feeling of what has happened here. You are very important for this story, you really are.***

LB: **Actually, practically, it started in 1917, before that it was more of a family spirit that prevailed, there was nothing I could do.**

FM: ***What happened in 1917?***

LB: **I left school and I came down here [Ensenada].**

FM: ***By yourself?***

LB: **My brothers and one of my brothers [meaning unclear]. My father was established in Tecate, building the railroad, [the] San Diego-Arizona railroad. He was more or less a land agent for the railroad, to buy land and acquire rights for the railroad. At the time he had a store and a saloon which catered to the building crews.**

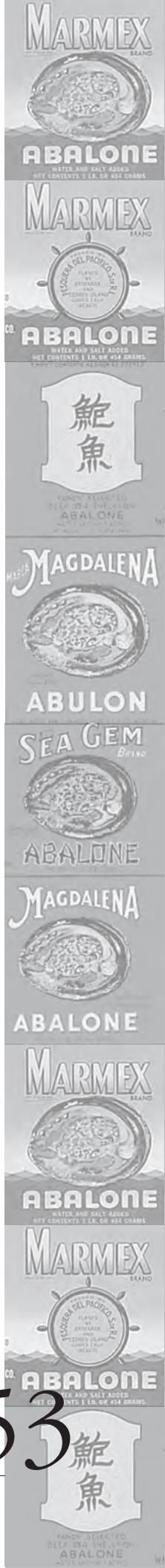
FM: ***How old were you then?***

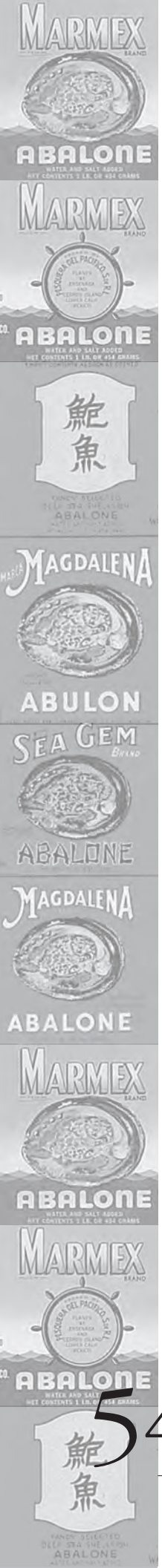
LB: **Fifteen or sixteen years old. They had, in those days, railroad gangs consisting of a variety of nationalities: Hindus, Chinese, Mexicans, Irishmen and Americans, and they all, of course, had their particular way of behaving in their spare time.... They were highly specialized. One group would drink a certain drink; one group would drink something else. None of this mixing of drink.**

FM: ***Did some of those people stay here in Mexico?***

LB: **The railroad workers, no they were complete itinerants....**

FM: ***When you became aware of this regionalism, what did you start doing with it? How did you express it? You were seventeen years old at the time and so you were becoming aware of the way you had to do things. You had to prove by your own statement that you were different, that you were not part of being Mexican, but Baja Californian.***





LB: **Well, primarily you came in contact with people who were already here for some time and you began to see that they had the same attitudes that we had. Gradually, through our activities we became identified with certain identical groups. First, the Russian farmers that grew the wheat [in Guadalupe Valley] that we would grind. We were quite aware of them. We knew them all. We had dealings with them and later we became aware of the people who worked for us in fishing and canning, when I guess we had very close contact with them. Since we were the only ones in Cedros, we possibly were the only ones aware of them as a group, of their attitudes, desires and things like that.**

FM: ***Of these people, obviously of different ethnic backgrounds, can you remember what it was like to travel between Tecate and Ensenada at that time?***

LB: **Well, of course, the Russians were a very strict sect. They would not drink or smoke…under no conditions would they eat fowl. Fish they would not touch. If you offered them a lobster they would feel insulted and they were great tea drinkers. They always survived on tea and sugar and big loaves of brown bread. They were big and strong. Another thing that is very important—I only know of one case, maybe another that they married outside their own group, only one.**

FM: ***Were there communications between Tecate and Ensenada that went through Guadalupe Valley?***

LB: **Yes, we had to stay there overnight because it took so long to go from Ensenada to Tecate or Tijuana, usually because it was too dark. In those days you had to be very bold. I was very bold. I would travel mostly at night by car. The roads were like some roads we have in the south. [After] some heavy rains there were ruts and bumps. I drove Model A's to Cadillacs.**

FM: ***The Russians, what happened to them?***

LB: **Well, the economic situation, they were primarily wheat growers and when the wheat lands began to be worked-off for lack of rain they began to disperse. A good number of them went to Glendale, Arizona, where they had relatives. Some went to Los Angeles. A few remained there and went into planting grapes. Two or three families moved to Ensenada and went into the gasoline station business and some of them are there today. But actually most [of them] dispersed completely.**

FM: ***And the other group of people that you were involved with were the fishermen. Where were they from and from what ethnic background?***

LB: They were from Ensenada. There always had been a small group there dedicated to fishing, but subsequently when we required …divers we began to get divers from La Paz, Baja California Sur, pearl divers. People from Magdalena Bay were quite sea-minded. They were an excellent group, good workers, and good boatmen. Then the San Ignacio people were very good. In fact, that is where most of them, the permanent ones, came from.

The Ensenada group would more or less come and go. They were very unreliable because in those days if you were a fisherman you were seldom out of jail because fishermen were drunkards and trouble-makers.

FM: *And how and when did you get started in the fishing business?*
LB: Right here in San Quintin, in 1919.

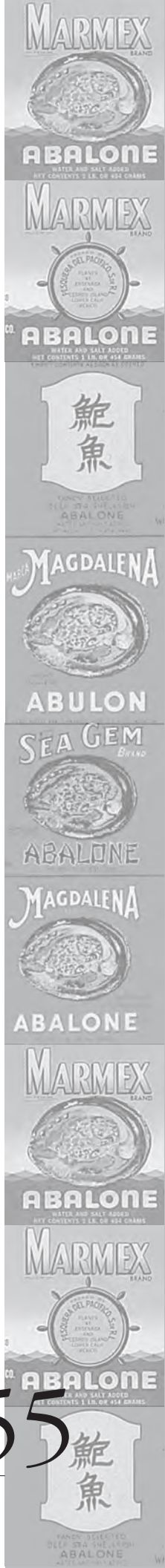
FM: *You were nineteen years old or twenty?*
LB: Well, my first day in San Quintin was Christmas Eve day in 1919.

FM: *What brought you here?*
LB: We were looking for something else to do because the flour business was going downhill very fast. We heard that there was a possibility of someone who had attempted to can abalone here and they failed. Someone said there was a business down here that we could buy for $2,500 [U.S. dollars]. So we bought it sight unseen and came down here to look at it…So, without having seen a cannery we just came in and the first product that we turned out, the cans were hand soldered. And a little later they were closed by hand. But later, when we began to see the potential, we began to mechanize. But here it was very difficult because where we located [there was] no firewood or water. Everything had to come by boat. With a dangerous entrance to [the bay], it was risky and we found that the potential was very limited here because of the natural difficulties.

FM: *Were there any roads down here at all?*
LB: Yes, but it might take you two or three days to get down here from Ensenada.

FM: *So, most of your supplies came in by water?*
LB: There was slow traveling, very slow speed. You may have to drive all night, you stop someplace at a ranch or just camp out.

FM: *Who bought the abalone you canned?*
LB: Initially, it went primarily to Hawaii and California, later to the Oriental market.







The men on Cedros Island begin the hard task of building a cannery in the 1920s.

Courtesy the author, from his Don Luis Bernstein Riveroll Archives, Private Collection

We went to Cedros in May of 1922. After two trips down there to investigate and explore, we found a source of water at the top of the highest hill.

FM: ***A big spring over there?***

LB: **A big spring and we immediately decided that was the place. We hauled everything from here that was of any value down there. We carried the pipe on our shoulders for the spring and immediately, as soon as we were able to install the water we were able to process abalone, primarily drying it.**

FM: ***One of the important things here is that the spring water that is used in Cedros originally was tapped by you?***

LB: **I would not say we discovered the spring.**

FM: **No, but you tapped it.**

LB: **We were the first ones to use it.**

FM: ***You and your brothers?***

LB: **Yes, we planted trees all around. Four brothers, together: Luis, Carlos, Guillermo, and Enrique. I was the outdoor man; another was the office man, another [was] the promoter. The fourth brother was a musician. He wanted to do his own business. His health was not very good. Eventually he became a part of the group, but not very active….**

FM: ***Actually then, the development of the town of Cedros came because of the cannery?***

LB: **Oh yes. When we arrived, there were only two burros, not even a fishing camp at that time. The fishing camps were mostly at Turtle Bay.**

FM: ***What about Turtle Bay. Was there a fishing camp?***

LB: **Yes, mostly Japanese and they would fish turtles, a few lobster camps. That was as far south that any fishing went.**

FM: ***When you went to Cedros, you started your cannery because of water?***

LB: **Water and the abundance of raw material which was so close. By then we carried oil as an energy source. The natural resource of abalone, a tremendous abundance. Fish, a natural resource. We did not have the problem of the entrance here [as with San Quintin Bay] and that was another advantage.**

FM: ***The accessibility of transportation was better than San Quintin Bay, which had the navigational hazard of sandbars.***

LB: **Oh yes, we lost one boat fully loaded and again it was Christmas Eve.**

FM: ***How many boats did you have?***

LB: **We usually had — [?] it was a matter of growth. As we were growing, we had more transportation boats. One thing that we did not do too much [of] was to have our own fleet of fishing**



boats. We nearly always got someone to fish for us, even though we supplied the boat. In transportation we also figured well, that is a separate business. We always let someone do that. We specialized in producing and I think that to a great extent that was one reason for our success, because we certainly could not cover all the aspects.

We would bus fish once we processed it. We said: *You will carry it for us*. So we stayed within those limits until later. When we began it was necessary to do some of these things on our own, especially transport.

FM: ***Actually you said the town of Cedros grew around the cannery.***

LB: **Yes, of course, the growth of Cedros came after we left, which was in the early thirties.**

FM: ***When did Abelardo Rodriguez [former President of Mexico] come in?***

LB: **He came in originally. He was interested in the reduction plant at El Sauzal, but since he and my brother had been very close friends, [they] had worked together in Nogales, played baseball together when he came here in 1920, shortly after he became a stockholder in our company.**

This photo, taken by Fabio Martinez, reflects the modernization of the Cedros cannery that Don Luis refers to in his 1979 interview.



But he was already established in Sauzal with a plant producing fish meal only, when actually he had less than 20% ownership in the company stock.

During the depression, Cedros, up to 1925-1927, because of the opportunity [Carlos and Luis Bernstein] decided to build a plant in Cabo San Lucas for tuna, which they did in 1927. At the time, we had three plants, the sardine plant in Cedros and Turtle Bay. We were rounding out our line of varieties of fish. The only thing we didn't have were sardines [in oval cans], which were not available in those days in Cedros or elsewhere.

So, again, you know with imagination, we decided that we were not going to put a sardine plant ashore because the sardines move a great deal, so we put a plant aboard a ship [a mother ship] so we went as far north as the Farallones Islands [Farallon Islands, Northern California, off San Francisco] to can sardines. We canned sardines as far [north] from Ensenada to Monterey Bay, San Clemente and the Channel Islands because that's where the sardines were…. I think that was the only time that anyone has canned sardines in oval cans. They canned salmon and other fish. I don't know if anyone had canned sardines in oval cans. Oval cans in a ship would slide.

FM: ***You were canning them in the ship?***

LB: **Oh, Yes! The oval can as it existed in Mexico [was] a Mexican product. We invoked international law. If American boats could fish in Mexican waters, Mexican boats could fish in American waters. It was all good and proper. Mexican goods are what we wanted it to be.**

FM: ***The oval can, where was that developed?***

LB: **I don't know. I always thought it was an aberration because it was the most expensive can you can get. It was expensive and there was tremendous waste. But the use of the oval cans [was implemented] because of the after use of the can.**

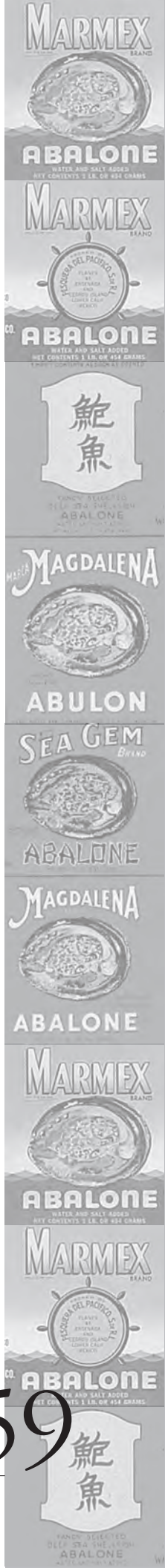
To begin with you could eat the fish right out of the can. Secondly, when the can was empty you could put soap or nails [in it]. Finally, kids could make a little car.

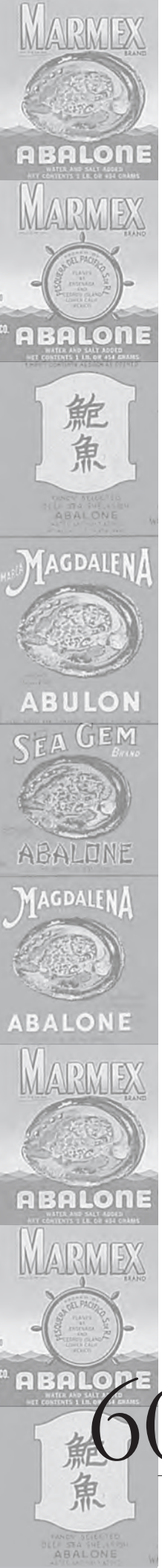
FM: ***I would like to get back to Cedros when you started the cannery. Is the cannery there, the one you started?***

LB: **Well, it is now rebuilt, modernized, made much larger, [but] that is the original site.**

FM: ***When it was bought by Abelardo, what did you do?***

LB: **The reason that we disposed of it was when the depression hit, it upset us completely. We were dealing with France; we were**





shipping sardines to France. We were not being paid in gold francs; we were being paid in silver francs.

We had a considerable amount of accounts payable in the United States. We had merchandise, but we couldn't sell so we were economically not trained to face that situation. We didn't know the realities because we had two alternatives: sell out, pay our bills and start all over again, or go back and wait a year or so, and start all over again. Then we'd be all right, but we decided to sell out and pay our bills, which we did.

The only one that had cash was Abelardo Rodriguez and then, of course, we dispersed. We never got together again; we went our separate ways.

FM: ***Do you want to talk about it?***

LB: **Yes, separate businesses: one of my brother's went to Sinaloa, another to Guadalajara to reorganize a brewery, the other brother, Carlos…. We kept the ship because it was a white elephant.**

FM: ***What was the name of it?***

LB: ***Calmex.***

FM: **Calmex, *let me ask you about it.* CALMEX *trademark was that yours?***

LB: **Yes, I was going to say that. Originally that brand was in 1920, right here in San Quintin. OCEAN GARDEN, we were in it also.**

We have a ship [but] no business for it. What can we do? Find some business for the ship. Where? Salt from San Quintin.

FM: ***The ship took salt from here to Ensenada?***

LB: **Oh no, [it] went to Puebla because that's where we had our allotment. All we had to do was keep alive. Freight was so scarce we picked up freight wherever we could get it. Sometimes we would get a load of cotton linters. Occasionally, we would do a little of coastwise trading in Mexico. [We would] occasionally haul salt from Carmen to Manzanillo and we even went as far as the northwest to haul pulp, newsprint.**

FM: ***Let me ask you, the ship* El Sauzal*, who owned that ship?***

LB: **The *Sauzal,* they came after we did – all owned by the Rodriguez group.**

FM: ***Rodríguez owned* El Sauzal *?***

LB: ***El Sauzal* was lost, *Cedros* was lost. They lost a lot of ships. I lost four or five medium-sized ships.**

FM: ***Sunk?***

LB: **Well, right after the outbreak of the war, Rodriguez (just before the war), he had a small ship built in Germany. He had it built as a freezer [ship] - must be the first shrimp freezer and they brought it to Guaymas and then San Diego. The boats that sank, to begin with one of them, *Santo Tomas,* sank right off Ensenada.**

FM: ***Many lives lost?***

LB: **Maybe one or two.**

FM: ***I think we will stop right here.***

Author's Note:

The preceding interview with Don Luis Bernstein was planned as the first of a series.

This endeavor was cut short by the untimely death of Don Luis on 10 October 1979.

There is an African Proverb which says***: When an Old Man dies in Africa a great library is burned.*** I learned this proverb when I traveled with the Verona Fathers (who I met while researching in Baja California) to Kapenguria, in Kenya, East Africa. I was invited to survey the residents of the area around Kapenguria including members of the West Pokot tribes, to determine the potential for community development and training.

This proverb applies to the history of the Baja California Commercial Fishing Industry because very little has been written about it. The history is in the oral tradition and tales of the people who created it and lived it.

The Story of Frank G. Kiessig *(1881-1939)*

AN INNOVATOR IN THE EAR

By Otto and Russell Kiessig

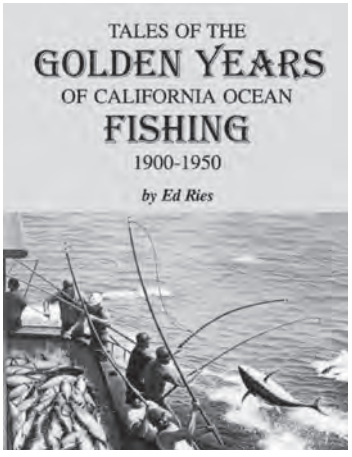
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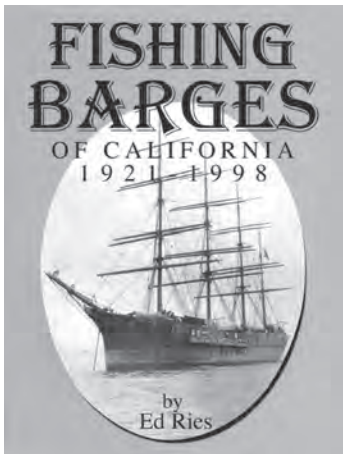
Ed Ries began ocean fishing at Santa Monica in 1932, and never quit. After working as a teenage deckhand and bait hauler on sportfishing boats, he obtained his first vessel master's license in 1938. Following a period of commercial fishing, he entered the U.S. Navy in 1940, and fished whenever his duties permitted. Commercial fishing resumed after discharge in 1947, along with studies at the Chouinard Art Institute (Los Angeles). Recalled to Navy duty in 1951, he retired as a Master Chief Boatswain's Mate in 1966, and resumed fishing for pleasure and profit. For fifteen years he worked as captain of yachts, charter and party fishing boats, operating locally and long range. In 1977, Ed again took up art work, painting in oils and watercolors. His interest in history led to intensive research into California's fishing heritage and the accumulation of photos and materials on the subject from many sources. In 1981, he began writing a monthly column on the historical aspects of ocean fishing for a new magazine, *South Coast Sportfishing*. The magazine changed ownership several times, but the column, over 300 stories and feature articles, has appeared in every issue until the present. His book *Tales of the Golden Years of California Ocean Fishing, 1900-1950,* was published in 1997, with an expanded second edition in 2007. A second book, *Fishing Barges of California, 1921-1998*, was released in 2000.

At age eighty-eight, Ed continues to research and record fascinating fishing history information, and in spite of physical handicaps, indulges his life-long passion for fishing whenever possible.

These two books by Ed Ries tell the history from the unique perspective of a passionate fisherman, an avid researcher, an author with equal talents in writing and painting – a rare find in any facet of study.

Both books are available through the publisher at Monterey Publications: www.montereypubs.com.





Editor's Note: The following unpublished article, co-authored by Kiessig's sons, Otto and Russell, submitted to the Maritime Museum in 1981, was unearthed recently from our files. The editor called upon longstanding member and author Ed Ries to read and edit this article for factual content. Ed Ries, author of *Tales of the Golden Years of California Ocean Fishing 1900-1950* (2 editions), and Fishing Barges of California 1921-1998, has researched and written extensively on every aspect of California's Fishing History.

While rendering his expertise, Mr. Ries also offered photographs from his vast research collection to help support this article. His detailed paintings bring the viewer to the vantage point of the fisherman, whether on deck and battling a hard-fighting tuna, or in the less boisterous moments of the single rock-codder hauling in his catch.

LY YEARS OF SPORTFISHING

Frank Kiessig was the son of German immigrant parents who moved their family to San Diego, California, in 1890, when Frank was eleven years old. His father, Charles, was a master gunsmith, and the day Frank was caught playing hooky from school, he started work as an apprentice gunsmith. As the family business grew in their spacious store at Fourth and F Streets, Frank's mother Bertha realized her dream of building San Diego's first hotel above the store and named it the Tower House. From their residence on Crosby Street, Charles built the family mansion on the corner of Second and Ash, now known as Kiessig Corner (Historical Monument #110). In 1896, the hotel was sold and Kiessig's Sporting Goods was moved to the corner of Sixth and E Streets.

San Diego was a rough-hewn western town in those days with dirt streets and horse-drawn carriages. Frank, being an avid fisherman, was familiar with all of the beaches, the bunkers wharf, Ballast Point, Point Loma rocks, and farther to the north, La Jolla. Frank was also a crack shot and well known for his prowess in the field, often killing deer and quail in what is now known as Fifth and University and Mission Hills. Frank was a hard worker who learned his trade well. He became a gunsmith, a master craftsman, and in his genial, garrulous and industrious way he became a popular member of the burgeoning community.

Dave and George Campbell started Campbell Machine Co. in a building between First and Front Streets in 1 September 1906. Starting out as a machine shop with a small amount of auto repair work, the business grew steadily until they moved to 1040 First Avenue in 1910. In 1915, the Campbells had outgrown their First Avenue building and moved to Eighth Avenue. The final move came in 1918, when the Campbells moved their building to the "new" Foot of Eighth Avenue, which they had created with fill dirt and rubbish from the City Dump.

This photograph, reproduced from the *Campbell Crier* (newsletter, Sept. Oct., 1971) shows the fledgling yard in 1928. Campbell's shipyard became the hub of the boatbuilding industry.



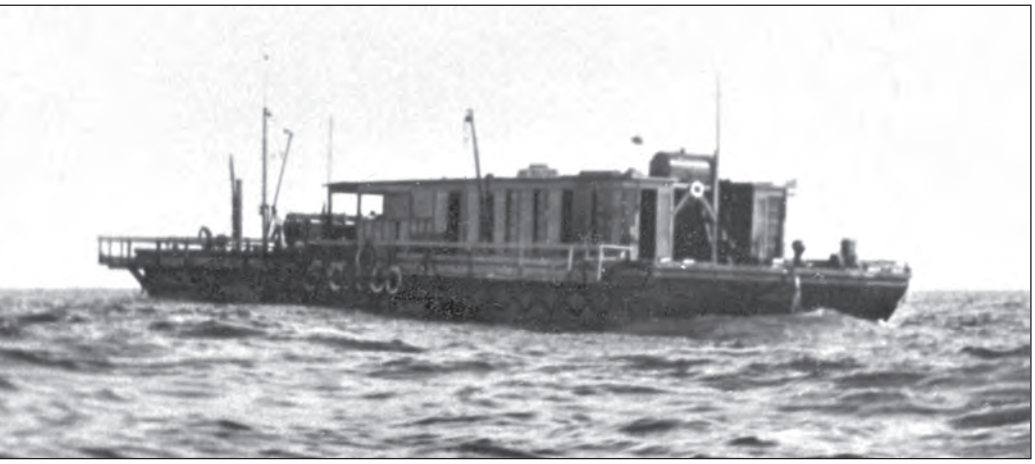
In 1926, most barges to the north depended on salted bait and used live bait only occasionally, or when it was plentiful and easily available. Frank Kiessig's plan to make it a primary and permanent part of his barge operation was among his early innovations in sportfishing.

Kiessig's Sporting Goods had expanded and prospered from the gunsmith and locksmith shop into a facility that added bicycles and motorcycles. Frank talked his father into sponsoring a baseball team, bicycle and motorcycle races, after he had spawned gun clubs and San Diego's first trapshooting facility. All was well until World War I intervened, bringing an abrupt end to the thriving sporting goods business.

Frank's love of the sea surfaced in 1919, when he contracted with Campbell Machine, Co. to have Manuel Madruga design and build a 65' purse seine commercial fishing boat, which he named after his daughter "Marguerite." No longer in the sporting goods business, Frank devoted his energies to commercial fishing, which was in its early stages of development.

Disheartened by the loss of his wife in 1921, Kiessig sold his commercial fishing boat and returned to the sporting goods business, but his love of fishing never abated. In 1924, Frank observed two scows moored off Long Beach, which were used as fishing platforms. Handlines and jackpoles (a heavy line with a leader tied to the end of a cane pole) were the standard fishing equipment. Frank was interested in the fact that a major portion of larger fish were lost due to the awkwardness of trying to gaff the fish from a deck twelve to fifteen feet above the water. He reasoned that a proper fishing platform should be closer to the water and then other comforts could be added to facilitate the process.

When the U.S. Navy had an auction in 1924, Frank was able to purchase a surplus coal barge, especially desirable because of the heavy timbered construction and the sheathed copper bottom protecting it from "toredos" (sea-going termites). The barge was 144' long with a 40' beam. Holes were





Left: The fishing barge *Ike Walton*, among the first of its kind, sported innovations that other barges lacked. Below: A deep foot well, wide-capped rails and a bait tank aft with eight hand-wells for scooping live bait, made the *Ike* a popular fishing platform. Opposite Right: Frank Kiessig's son Otto (co-author of this article) is pictured onboard the *Ike*, having gaffed a yellowtail. Opposite Top Right: The sheer pleasure of the catch is evident on Mrs. Phillips face as she poses with her yellowtail.

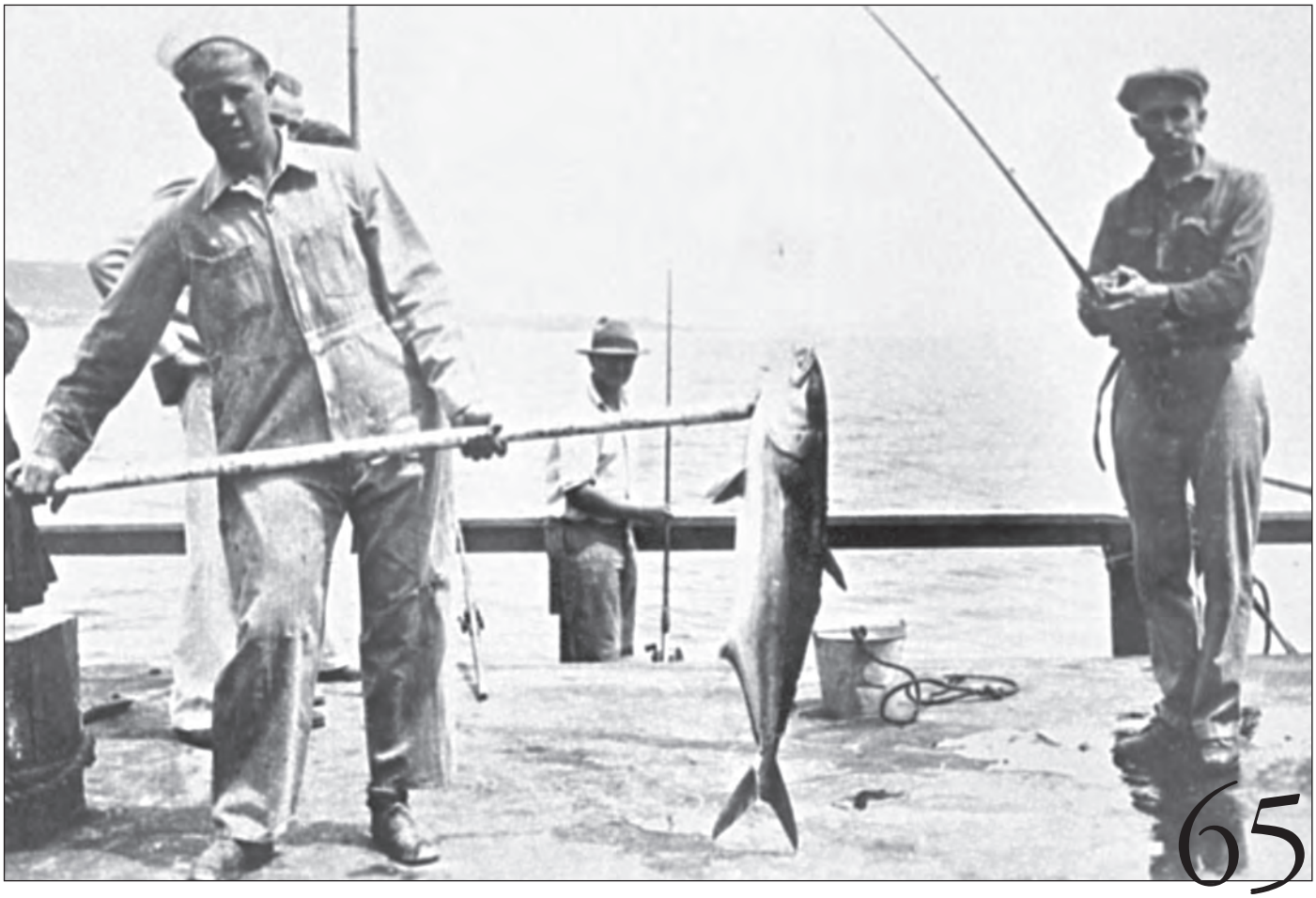
Courtesy Ed Ries Photographic Collection

cut through the hull on both sides and the stern, and heavy support timbers inserted every six feet so that this fishing platform was just four feet above the water. Since it was two feet below deck, an 18" deep step was added to provide comfortable seating for the fishermen. A nice wide cap on the railing made it more secure for those who preferred to stand. The deck was paved with asphalt so it could be washed frequently without damage to the deck. A long, low cabin was built on the forward end of the barge with two restrooms on the bow. Each side had ten cabins, each with upper and lower berths, and each made up with sheets, proper pillowcases on pillows and double blankets – an added luxury compared to other barges of its day. The aft end of the barge was comprised of the galley, dining area, tackle shop and office. A bait tank was built near the stern; it was unusual because the top sported eight "hand wells," where a fisherman could help himself to a live sardine.

To provide for the bait and bilge pumps, plus the generator and engine, a compartment was built below deck just forward of the bait tank. Since live bait was to be one of the major inducements, Frank decided to construct two reserve containers to be floated under the stern platform. When the barge was finally completed, it was christened *Ike Walton,* in honor of the patron saint of all fishermen the world over. [Izaak Walton, 1593-1683, was an English writer who wrote the first comprehensive book on fly fishing, *The Compleat Angler*, in 1653.]

In April 1926, the *Ike Walton* was towed to its summer location







Frank Kiessig's bought the 65' *Sportfisher* (ex-*Betty B*.**) in 1932. By 1934, he had engineered and implemented his design for a bait tank storage system (bait receivers), which became the key to preserving fresh bait.**

Courtesy Ed Ries Photographic Collection

off the northern-most point of the La Jolla kelp beds, and the first customers were taken from the beach of the famous La Jolla Cove in a twenty-foot skiff through low surf to a water taxi moored 300 yards offshore. The fare of two dollars, with live bait guaranteed, made the *Ike Walton* an instant success. On those days when the contract supplier was unable to find sardines, purchases would be made from several commercial live bait boats in the vicinity. There were some days when the cost of the live bait (always sardines) exceeded receipts by three to one. Catches, however, were very gratifying and overnight customers continued to increase. On one occasion, there were ninety fishermen – only forty could have bunks, so the others curled up on deck or fished all night.

From the first day of fishing onward, policy was firmly established: it was rod-and-reel fishing only. Frank would patrol the deck and if anyone was discovered using a handline, he would quickly take out his knife and cut the line. Smiling, Frank would remind the fisherman of the barge policy and loan him a rental fishing outfit at no charge. The abundance of a variety of exciting catch game fish including that dogged fighter, the Pacific Yellowfin, and, usually, an ample supply of their bait – sardines, was a fortuitous combination in San Diego waters at that time.

Observing how rapidly the sardines died in the reserve tanks, Kiessig continued to build one tank after another, trying to solve the problem. As the cost of live bait continued to climb due to the three-hour run to the Coronado beach flats (where most of the live bait was netted) then back to the *Ike Walton* at La Jolla, it was finally decided to move the barge to the kelp beds off Point Loma at the start of the 1929 season. However, the catches at Point Loma at the start of the 1929 season did not compare to those at La Jolla, so Frank envisioned moveable fishing platforms that could go wherever the fishing was best.

In 1930, with a lease agreement with the Schipper family, Frank started the first open party-boat sportfishing at the Coronado Islands. The fishermen were ecstatic in their praise of this bountiful fishing area, but it wasn't long before Frank realized the Schipper boat, *San Antonio,* had a number of shortcomings and if he expected his business to grow, it was imperative he obtain a better

boat. He found a reasonably new 65' commercial fishing boat (formerly the *Betty B.*) for sale in 1932, which he bought and quickly refurbished. Once back on the daily run, Frank found himself surrounded by competitors, all angling for their catch: Star & Crescent's *Sea Angler,* the *San Antonio,* Mel Shears' *Mascot II*, Tadlocks' *Yellowtail*, Wes Williams' *Kingfisher I* and Joe Basinger with his boat.

Frank named his vessel *Sportfisher* and resolved to be the leader by offering better service and a more dependable bait supply. A raft of ten live bait storage receivers was moored near a sandbar on the west side of the bay – a small barge with sleeping quarters and a light plant [an engine-driven generator for electric light] was provided for the caretaker. After constructing over fifteen different models of live bait storage receivers over the years, it wasn't until 1934 that the ultimate answer was found. It was screened with a removable lid on top, solid on all four sides, with the bottom slatted so the dead fish could fall through. Operators up and down the coast rapidly copied this design and are still using this type of receiver today.

The Coronado Island trips were an instant success and Frank decided to sell the *Ike Walton*, which would free his water taxi, the *More Fun*, for use as a charter boat. He also leased his smaller boat, the *Genoa*, with a capacity of thirty-five fishermen. The need for more capacity became apparent by 1935. Vessels designed specifically for sportfishing were being built in San Francisco by the George Kneass Company. With a capacity of sixty-five fishermen, the design quickly gained popularity and Frank decided more innovations were in order. He had noticed that a certain group of fishermen made a practice of coming early in order to tie their rods to the railing in a choice spot at the stern, depriving others of this opportunity. As a result, the "rotation system" was introduced, whereby the passengers were split into three groups, identified by colored felt badges, and rotated each hour of their stay at the fishing grounds. Then came sleeping accommodations: sixteen bunks on the new *Sportfisher II* had innerspring mattresses and Pendleton blankets with sheets changed daily! When there were not enough bunks, sleeping bags were made available. Cleaning the fish for the customers was started in 1934, when a customer asked Frank's son, Otto, if someone could clean his fish as the boat departed the Catalina Island fishing grounds. Otto said "sure" and set about cleaning it himself. As he finished the first sack, others came up and asked to have their fish cleaned. Otto then had the crew bring all the remaining sacks to him, and by the time the *Sportfisher II* entered San Diego Bay, he had cleaned 197 Yellowtail. After Otto relayed the story to his father, Frank implemented cleaning as a standard part of the service the next day.

On 11 May 1936, *Sportfisher II* established an all-time record catch of 586 yellowtail, averaging twenty pounds in size (with forty-one passengers aboard). Stories of the day abounded including how they ran out of bait and used anything not fixed to the deck: a cigarette butt, a white rag, a sliver of yellowtail belly…. The record would soon be broken, however, when on 17 May, Captain Bill Miller of *Star Angler* hauled in 623 yellowtail with thirty-five anglers aboard.

Talk of bigger fish and new fishing grounds persisted throughout the summer of 1936, and with twelve of his regular customers, Frank made plans to start the first of the "Wanderlust Tours" to Cape San Lucas, the southernmost tip of Baja California. *Sportfisher II* was fitted with an awning framework aft, on top of which were nested four 16' skiffs. These had been equipped with two swivel chairs for the fishermen, and ten-horsepower Johnson outboard motors providing the power.



Otto Kiessig (in foreground) is pictured on *Sportfisher III* with the catch from a long-range trip in 1939.

Courtesy Ed Ries Photographic Collection

A crew member was assigned to do the steering and handle the gaff when necessary. On the first fourteen-day trip, the *Sportfisher II* returned to San Diego with fifty-four marlin and twenty-three sailfish packed in ice.

It was in August of 1937 that Frank started the first regular five- to six-day fishing trips to Guadalupe Island (after having observed that two weeks proved too long for most fishermen to be away from their business concerns). Because "seasoned" live bait was so important on the Guadalupe Island trips, the live bait storage raft, anchored just inside of Ballast Point, was doubled to twenty bait receivers. When sardines were plentiful any load of small sardines (about three inches in length) was placed in one of the bait receivers next to the bait barge where Dominic Sanfilippo could give them a daily ration of Cream of Wheat cereal. This continued for three months and by August the sardines had grown to seven, even eight inches in length and were unusually firm.

Frank was adamant about protecting and conserving live bait. He was aghast at the Fish and Game Commission's policy which permitted the taking of 990,000 tons of sardines for reduction that year – for meal and oil. Frank thought that if the practice continued, the Pacific Coast Fisheries would be doomed, as there would be no food to attract the large schools of migratory fish each year. Within a few short years his opinion became fact, when the Monterey canneries were closed down and the Fish and Game Commission shifted the reduction industry to anchovy.

In 1938, Frank was overseeing the construction of *Sportfisher III* when cancer intervened. He passed away on 18 July 1939. As he had requested, his ashes were scattered at sea one mile south of the bell buoy outside of San Diego Harbor's entrance. The funeral procession of boats included not only the *Sportfishers,* but those of his competitors in the sportfishing industry. Among the sportfishing community to honor Frank Kiessig's passing were Joe Basinger,

Wes Williams, Oakley Hall (owner of San Diego's Star & Crescent fleet), Howard Minor, Bill Hoss, Arthur and Nick Johns, and Dominic Sanfilippo. When the circle was formed, a profusion of wreaths and colorful flowers were floated upon the sea, a silent tribute to a man who had earned their admiration and whose ideas and unceasing effort marked Frank Kiessig as a pioneer in the Sportfishing Industry.

Post Script: Frank Kiessig was indeed an extremely important pioneer and innovator in the ocean Sportfishing Industry. He initiated features that became the standard for all successful operators and are still in use today. No handline, jackpole fishing or crew fishing were allowed on his sport boats. The rotation system and fish cleaning by the crew were new ideas. Live bait supply and storage methods were also improved. The first long range, multi-day trips were significant advances that are now a very important feature of the San Diego Sportfishing Fleet.

Frank's son, Otto, carried on the business until World War II. [Editor's note: Otto Kiessig served as Executive Officer aboard the *St. Ann*, YP-517, during the war years.] The *Sportfisher* fleet was rebuilt at war's end and merged with H & M Sportfishers in 1949, when the landings were moved to the Point Loma location. The last of the *Sportfishers* was sold off in 1952.

— Ed Ries



Above: Frank Kiessig (left) posing with a marlin (and unidentified man) in front of his store.

Courtesy Ed Ries Photographic Collection



Left: Fishing in the 1930s.

Courtesy of the artist, Ed Ries



Two Men and Their Boats:

Tony Giacalone (1920-2007) and Joe De Santi (1923-2005) Remembered

by Maggie Piatt Walton

Maggie Piatt Walton photographed Joe and Tony during their 2004 interview.

Tony (Antonio) Giacalone and Joe (Giuseppe) De Santi were born in San Diego's "Little Italy," of parents from the fishing town of Mazara del Vallo, Sicily. Both of their fathers had been fishermen and had come to America around 1912. Their fathers used the traditional Sicilian set line fishing method, called palangari (translated "longline"), which Joe and Tony would continue to use throughout their fifty years of fishing together.

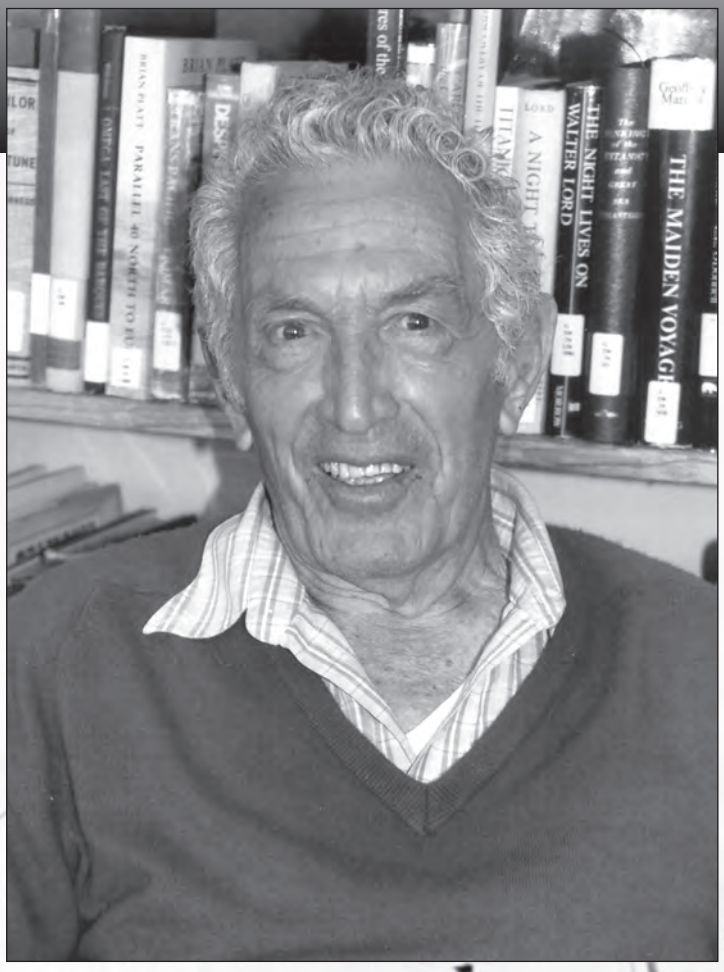
After their accidental entanglement in the 1950s, Joe and Tony became lifelong friends and partners in business, sharing their catches and their days fishing together.

Until their retirement in 2002, they fished together three or four times a week, slipping out *even before the moon's out,* Tony laughed, meaning about one or two o'clock in the morning, then they'd return sometime early afternoon.

Together, each piloting their own 32' Monterey fishing boat, they caught mackerel, rock cod, Pacific red snapper, sand dabs and even barracuda with set lines. But it was the spiny-backed sculpin that would become the mainstay of their livelihood. While it was considered the "filet mignon of the sea," the sculpin's spiny scales are poisonous, inflicting incredible pain upon puncture to the skin. Both Tony and Joe had been stabbed by sculpin and each described their reaction to the blistering pain. Joe said the pain was *excruciating*, so much so he wanted to throw himself overboard. Tony was a bit more tolerant of the pain: *My hand just swelled up the size of a basketball.* Regardless of the pain, the danger, and the hours; the two men fished three to four days a week, bringing in their catch, and dropping it off at Chesapeake Fish Co. or Anthony's Fish Grotto for half of a century.

Opposite Right: One fateful day in the 1950s, the two fishermen's lines got crossed and tangled at sea. As Tony told the story: *…while I was untangling the mess, I said to Joe,* **Why not put everything together***… and we've been fishing ever since.*

Courtesy the Giacalone Family

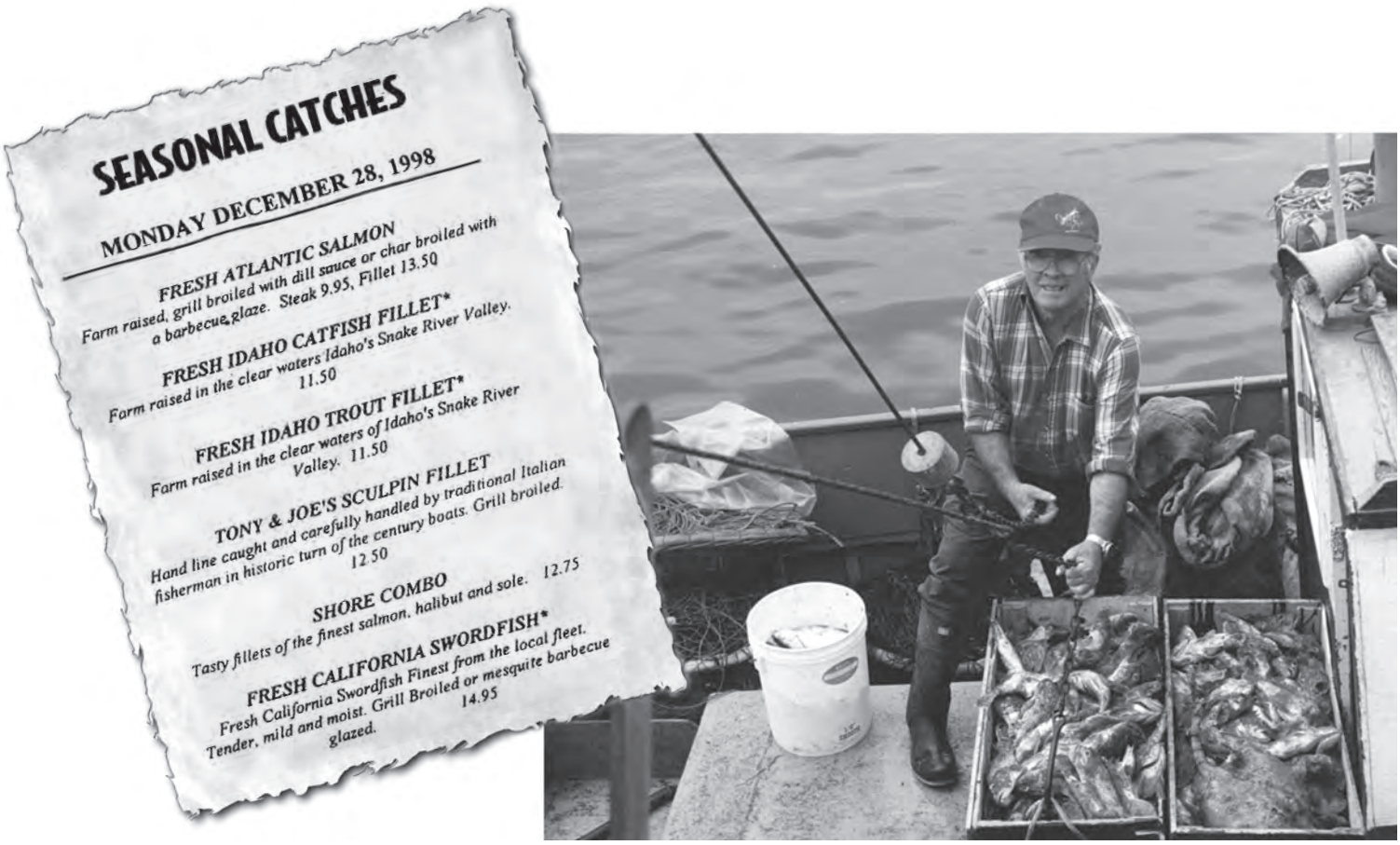


Editor's Note: This story is based on interviews by Bob Wright and Maggie Piatt Walton (in 2004, at the Maritime Museum of San Diego) with two fishermen: Tony Giacalone and Joe De Santi. Their contribution to the history of the San Diego fishing community is immeasurable, while their legacy is tangible, and preserved in the two boats they left behind for all to view and admire.

Joe and Tony were good friends of the Maritime Museum of San Diego, much loved, and now missed along our waterfront; their spirits live on in their Monterey fishing boats *La Diana* **and** *Mary Ann***.**

It is their story and their heritage which inspired this issue of *Mains'l Haul.*

We are very grateful to the De Santi and Giacalone families for the use of many of their family photos which appear in this article.



Above Right: : Tony, at the docks, offloads sculpin for the markets.

Courtesy the Giacalone Family



In this photo (c. 1950s), Tony's father stood in front of the *Star of India***, perhaps reminiscing about his days fishing for salmon aboard her in the early 1900s. Both Tony and Joe's fathers (Joe remembered the date as about 1916) had worked in the salmon business for a season and had sailed on the** *Star of India* **during her days with the Alaska Packers' fleet.** *(see pages 78-79)*

Courtesy the Giacalone Family

Those fish, although they're hooked, they're mostly still alive, Craig Ghio [vice president of Anthony's] said, *they're wiggling when they come off* [the boats]. The traditional method of set line fishing brought the sculpin in alive and wriggling, so fresh that *Tony and Joe's Sculpin* earned a place on Anthony's menu.

Growing-Up in San Diego

Though there was a three year age difference, and they attended different schools, Tony and Joe lead parallel lives. They grew up in San Diego in tough times, during the depression. Their fathers taught them to fish and their mothers, sisters, and cousins worked in the canneries: Westgate, Del Monte, and Neptune, nearby on Harbor Drive.

When I was a young kid, Tony recalled*, the sardine and mackerel boats would come in and the whistle would blow. The women would run down from Little Italy to work in the canneries.* Tony helped set up cans for his mom to can mackerel. Their mothers were paid by the amount of fish they canned, or trays of fish they cleaned. Whether fishing on their fathers' boats during summer vacation or helping out at the cannery, the kids were a part of the local fishing industry.

The War Years

In 1939, before Joe and Tony were called up for service, Joe had bought his Monterey boat, *La Diana*, from his father for five dollars. With a small crease of a smile, Joe mentioned that after the official sale, his father handed



Above: A small fleet of Montereys are pictured in this 1929 photo of dredging operations just south of the airport along Harbor Drive.

Courtesy the San Diego Historical Society Photographic Archives

him back the five dollars. *La Diana* was not named after a family member or lost love – "Diana" is the De Santis' clan name in Sicily.

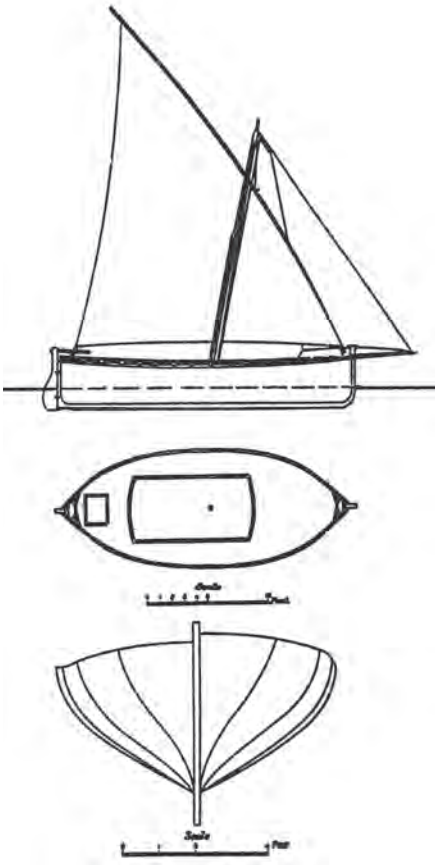
Tony paid $1,900 to Mr. Angelo Zolezzi for his Monterey boat with a new compass – an enviable fact that Joe never let Tony forget. He named his boat *Mary Ann* (after his daughter). The boats were tied up at the Embarcadero, at the foot of Hawthorne where there was a small fleet of Montereys, somewhere between fifteen and twenty.

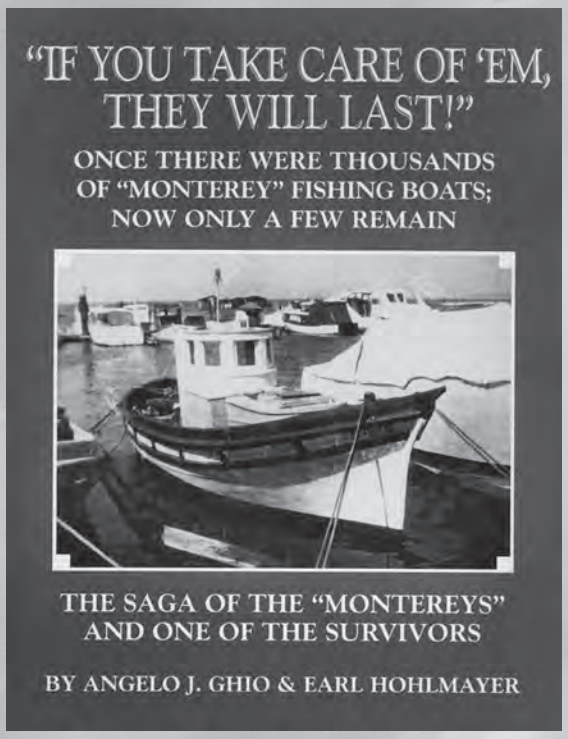
Of Fine Lines and Simplicity – The Monterey Boat

Both boats were made of cedar and oak and were built in 1930 by the Labruzzi Co., in San Francisco. It is unlikely that any two Montereys were built exactly alike, as there were no plans to draw from. Inspired by the small felucca sailing boats of the Mediterranean, and refashioned for local West Coast conditions, the Montereys evolved into adept working boats, eventually powered by two- and three-cylinder diesel engines that burned approximately one gallon of fuel an hour.

La Diana and *Mary Ann* came with 12 hp Hicks gasoline engines, but Tony replaced his with a Chrysler Marine gasoline engine. Joe noted that he had one of the first diesel engines put in a Monterey. *La Diana* got her Grey Marine engine in 1955.

FELUCCA PLANS





Angelo J. Ghio and Earl Hohlmayer describe in their book, *IF YOU TAKE CARE OF 'EM, THEY WILL LAST!* **the building practices of Dominic Labruzzi:**

> *They have patterns used in building of [the] last group of Montereys…Keels were originally ironbark, but later oak. Planking was done on "shutter planking" method. Beginning with garboard, every other plank was put on, right around [the] boat, then intervening planks wedged in place. No caulking. Fits had to be very good. Garboard was caulked. No rabbit along length of keel, only a slight bevel at top to allow slightly more surface.*
>
> *All planking was steamed. Dominic [Labruzzi] used slightly heavier planking than normal, 15/16"…*
>
> *Planking of stern very tricky. Boards had to start out 14" to 16" to allow shape to be cut in. Last shutter aft was most tricky. Shape would make for cross grain… Frames were Indiana bending oak….*
>
> From the conversation with Larry Labruzzi (son of Dominic), 16 March 1984 & Stephen Canright, San Francisco Maritime Museum, pg. 41.



Joe would eventually earn the reputation of being the strongest man on the waterfront. At only 5' 6" tall, his large arms were well-muscled from years of pulling in set lines. Arm wrestling was the test and Joe won them all. Joe recalled taking on one of the biggest guys at his high school and winning without so much as taking a deep breath. *He was light as a feather, there was nothin' there,* **Joe laughed**.

Courtesy the De Santi Family

There's much to be admired about the sturdy Montereys, even though Joe admitted, *they were a bit roly-poly until you get a load of fish in*. The bow shear had a clean way of slicing through the water and Joe added, the *fantail laid down the water so flat, it didn't disturb the fish…*and the boats could hold over two tons of fish each.

In his teens, Joe was fishing sardines and earning seven dollars per ton. Meanwhile, Tony was fishing for tuna on the *Catherine,* from 1938 to 1939, on fourteen- to thirty-day trips.

During the war years, Joe entered the Navy, serving as Fireman 1st Class from 1943 to 1946. When asked if he saw much action, Joe shook his head, and looking down he said, *No, but I lost my cousin, he was on the fishing boat,* Yankee [YP-345, see pg. 34, this issue].

While fishing aboard the *Catherine*, Tony heard the news that he had been drafted into the Army. He was stationed at Camp Halsey, Texas, throughout the war and was decidedly unimpressed with his job *peeling potatoes*. With an unwavering smile, Tony referred to the Camp as *Fort Alcatraz*.

Joe remembered the sad feeling of heading off to war and of leaving San Diego Bay in his wake. He recalled passing *La Diana,* tied up at the dock, and he wondered if the *Japanese would come and take the fishing boats in San Diego*. It seemed like a real possibility at the time.

A Return to the Fishing Years

After the war, Tony and Joe returned to San Diego to marry their sweethearts (Antoinette and Estelle, respectively), and to raise their families. They went back to their Sicilian style of fishing – stringing out long lines with hundreds of hooks on each line.

The two fishermen would start out in the earliest hours of the morning. It took them about an hour and a half to get to their *secret fishing spot, and it*



The Maritime Museum of San Diego's shipwrights Jeff Saar (right) and Bryan McCarthy (left) took on the enormous task of restoring the two Monterey fishing boats. The restoration took more than a year to complete, and came to fruition with their dedication alongside the *Star of India* in 2006.

Courtesy Maggie Piatt Walton, MMSD



Right: Tony prepared for his next day of fishing, coiling the lines into the baskets and baiting the hooks, which he could only describe as *tedious and time-consuming work.*

Courtesy the Giacalone Family



Below Right: Joe baiting his hooks in a photo taken by Joe Stuart.

had to be the exact spot, not even off by ten feet, Tony noted. They would be out there by themselves in the dead of night, foggy or not, foul weather or clear, each in their own boat, steaming due west of the Point Loma headlands. When asked how far out they went, Joe quipped: *Until I couldn't see my house anymore....*

The coiling of the lines into the baskets had been done the previous afternoon. The early hours of the morning were left to the job of setting the lines. In each of their four to six almost flat wicker baskets were approximately 300 feet of precision-coiled nylon line – the set line. On the long set line, spaced about a foot apart, was attached a leader line with a #3 (sometimes a #4 or #5 was used) hook at its end.

Each of the 400 hooks per basket was baited by hand along the basket's rim with salted anchovies. Getting the baskets ready was very time consuming and tedious work. Their fathers and other members of their families usually helped.

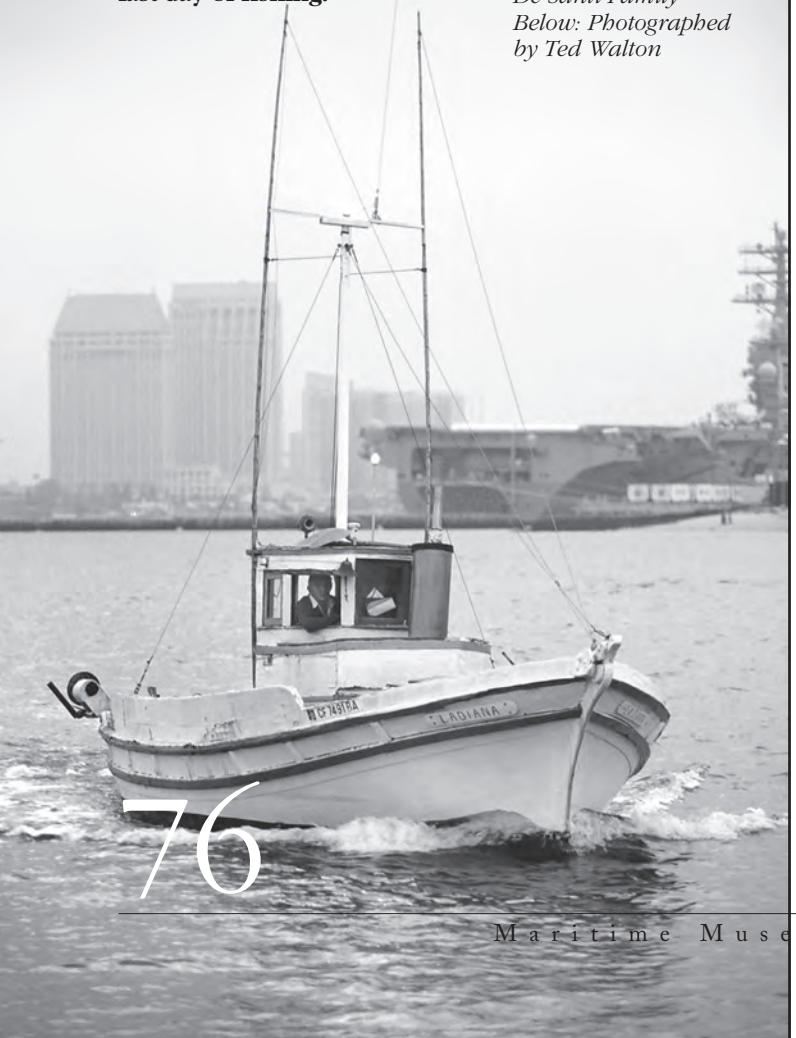
A five-pound weight was attached to one end of the set line, to take the line to the bottom in about twenty fathoms. A buoy was attached to the other end of the line with a flag as a marker. While slowly motoring away from the anchored line, the set line was carefully uncoiled, or "flipped" out of the basket. The four to six baskets of set lines trailed out from each boat, covering the size of a football field.

While they waited for sunrise, the two fishermen talked via radio, trading



Below: *La Diana* **on her last day of fishing.**

Above: Courtesy the De Santi Family
Below: Photographed by Ted Walton



insults and jokes, while trying to stay warm with their coffee and sandwiches. As the sun crested the horizon, the fish feeding began and soon the long hard work of hauling in the lines would follow.

As the hydraulic winches went into motion, the fishermen would quickly *whip* and *snap* the fish off their hooks, sending the sculpin inboard, where they would continue to flap around in the saltwater wash until their delivery to the fish markets that afternoon. At times, nearly every hook had a fish! It was hard work, but they enjoyed it.

The men arrived back about 12:30 or 1:00 p.m. to unload at the Chesapeake Fish Co., at G. St., or at Anthony's. On a good day, they could make as much as twelve hundred dollars. Then, having settled up their accounts, they would go for coffee and donuts and discuss…fishing, before preparing their boats for the next day.

Joe and Tony had endless tales to tell, but cautiously so.

They dodged pointed questions, which were aimed at trying to locate their coveted fishing grounds, while sharing knowing glances at each other – secrets that would never be told.

When asked if they had ever had a close call at sea while fishing, they both sat quietly for sometime, and then they nodded together, *Nope.* Perhaps that was another one of their pacts, perhaps they both knew that by sticking together, they insured each other's survival, they would look after each other no matter what, and so they did….

They also kept a St. Anthony's medal on Tony's boat, and a St. George holy card on Joe's boat with palm crosses for good luck.

For over fifty years, Tony and Joe fished for their specialty. In 2002, the Fish and Game Commission's restrictions ended their careers by changing the sculpin fishing season.

Joe was keenly aware of the environmental issues surrounding fishing, though he didn't frame them as "issues." They were point blank certainties about fishing, especially for sculpin, which seemed indisputable to Joe and Tony. *Why not close the sculpin fishing season when they know it is the spawning season – June to September?* What made plain sense to the two fishermen went by the board when the restrictions were put into place.

When requested to maintain the ten-inch legal size limit for their catch, both men wondered how they might manage measuring the poisonous sculpin as it was whipped onboard their swaying boats.

They knew instinctively what size could be caught without diminishing the overall population.

Conservation was not so much a tag line for them, as an inbuilt desire to survive and preserve that which their survival depended upon. They believed set line fishing to be one of the most environmentally sound methods of fishing due to their ability to specifically target their catch – the exact size and species, minimizing bycatch. They utilized their knowledge of time of day and feeding patterns, set line length and depth, bait, location, and they fished only for what their small boats could hold.

Joe's second son, Joe De Santi Jr., recalled his experience as a marine engineer aboard the factory trawlers in the Bering Sea and the Gulf of Alaska. When Joe Jr. returned from his first trip up north, he met his Dad down at the dock where he was working on *La Diana*. Joe Sr. called over: *How was it up there?* Tears started to well up in Joe Jr.'s eyes: *Dad…the fish that they throw away in five minutes would sink your boat.*

This was the kind of fishing Joe Sr. railed against.

Joe and Tony were the last commercial fishermen to practice set line fishing in San Diego waters. They retired together after each of them had fished for sixty-nine years.

There will be nobody to take their place ever again,* said Tod Ghio, a friend from the old neighborhood and one of the founders of the family-owned Anthony's chain. *They're the last of their breed.

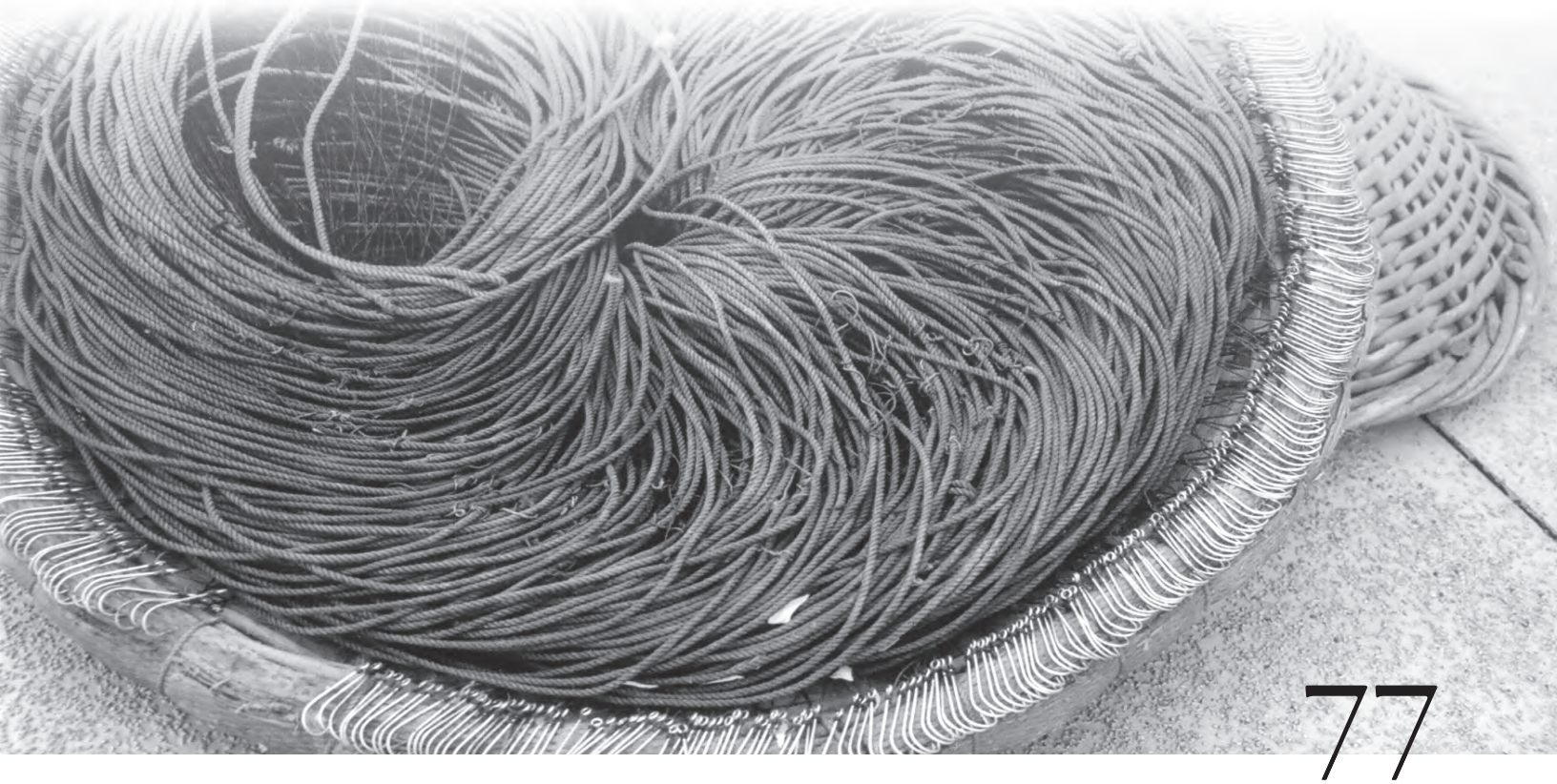
Postscript: Joe passed away at eighty-two years old in 2005, and Tony passed away at eighty-seven in 2007, entrusting their stories and the Monterey fishing boats, *La Diana and Mary Ann,* to the Maritime Museum of San Diego.

I am honored to have known these two hardworking family men, who shared their stories of fishing on their Montereys with us. Their traditional set line fishing technique is an integral part of San Diego's fishing history.

— Maggie Piatt Walton, 2008

*** All quotes from the Ghios were excerpted from: "Hooked on Tradition- Duo last in San Diego to Fish the Old Way," by Anthony Millican, *The San Diego Union-Tribune,* San Diego, California, 3 Jan. 2000.**

Photograph by Maggie Piatt Walton



Monterey Fishing Boats

La Diana and *Mary Ann* (1930)

Hundreds of Monterey clippers like these once fished in California's coastal waters. *La Diana* and *Mary Ann*, the last of these lovely boats to work out of San Diego, retired from active service in 2002. The Montereys were direct descendants of late 19th century sailing feluccas of the Mediterranean. Italian and Sicilian fishermen working out of San Francisco adapted this familiar design until it perfectly suited their needs off a foggy and wind-ravaged coast. Few of these boats were actually built from plans, but were customized to satisfy the anticipated functions and aesthetics of their owners or builders. Early versions were sailed or rowed up the Sacramento River to gillnet salmon but, with the addition of small engines, they became a standard craft for hunting everything from salmon and crab to herring, shrimp, sculpin, mackerel and sardines up and down the Pacific coast



Photo Credit: Jeff Loman

La Diana and *Mary Ann*

Builder: Dominic Labruzzi - (1930)

At one point, Monterey Fishing Boats were a common sight along the California coast, but by the l970s only four of these boats fished out of San Diego and then there were none. When Tony Giacalone and Joe De Santi retired in 2002, these last two boats retired with them. Tony and Joe, both members of local Italian fishing families, worked the boats out of San Diego from the 1940s. Fishing near each other one day, their lines became tangled, and they decided to sell the combined catch and split the money. This began a partnership between fishermen and boats that lasted for half of a century on the water. The boats remain together today as permanent exhibits commemorating the maritime heritage of our waterfront communities and the cultural roots of nearby Little Italy.



Photo Credit: John McCutchen / The San Diego Union-Tribune

Left: Tony Giacalone's father stood, perhaps 50 years ago, at the same spot where his son's boat rests today *(see page 72)***.**

NOAA Fisheries Service:

What Have We Done For You Lately?

Our Long-Term Commitment to Conserving Marine Resources

By Sarah M. Shoffler, Meghan Donahue, and Sarah Mesnick, Ph.D.
Southwest Fisheries Science Center, La Jolla, California

Did you know that in 2007, the United Nations' Food and Agriculture Organization reported that seventy-five percent of the world's fish stocks that it assesses are either overfished or experiencing overfishing,[1] meaning we've fished them beyond the point of sustainability? Considering we, as a world, have caught around eighty million tons of marine fish per year since 1990, it is not surprising that the effects of fishing can reach beyond the targeted animals. Fishing not only directly affects non-target species, for example sea turtles caught



in trawls or on longlines; it can indirectly affect other species by way of altering the balance in an ecosystem. The human footprint extends beyond the deck of our intended actions. In the marine world this has resulted in any number of fishery collapses and species extinctions, some of which you may be familiar and some of which are covered in this issue of *Mains'l Haul*. But all is not doom and gloom. The ocean and its resources have a steward who, with its partners, promotes sustainability in our oceans and toils toward success.

Enter NOAA Fisheries Service

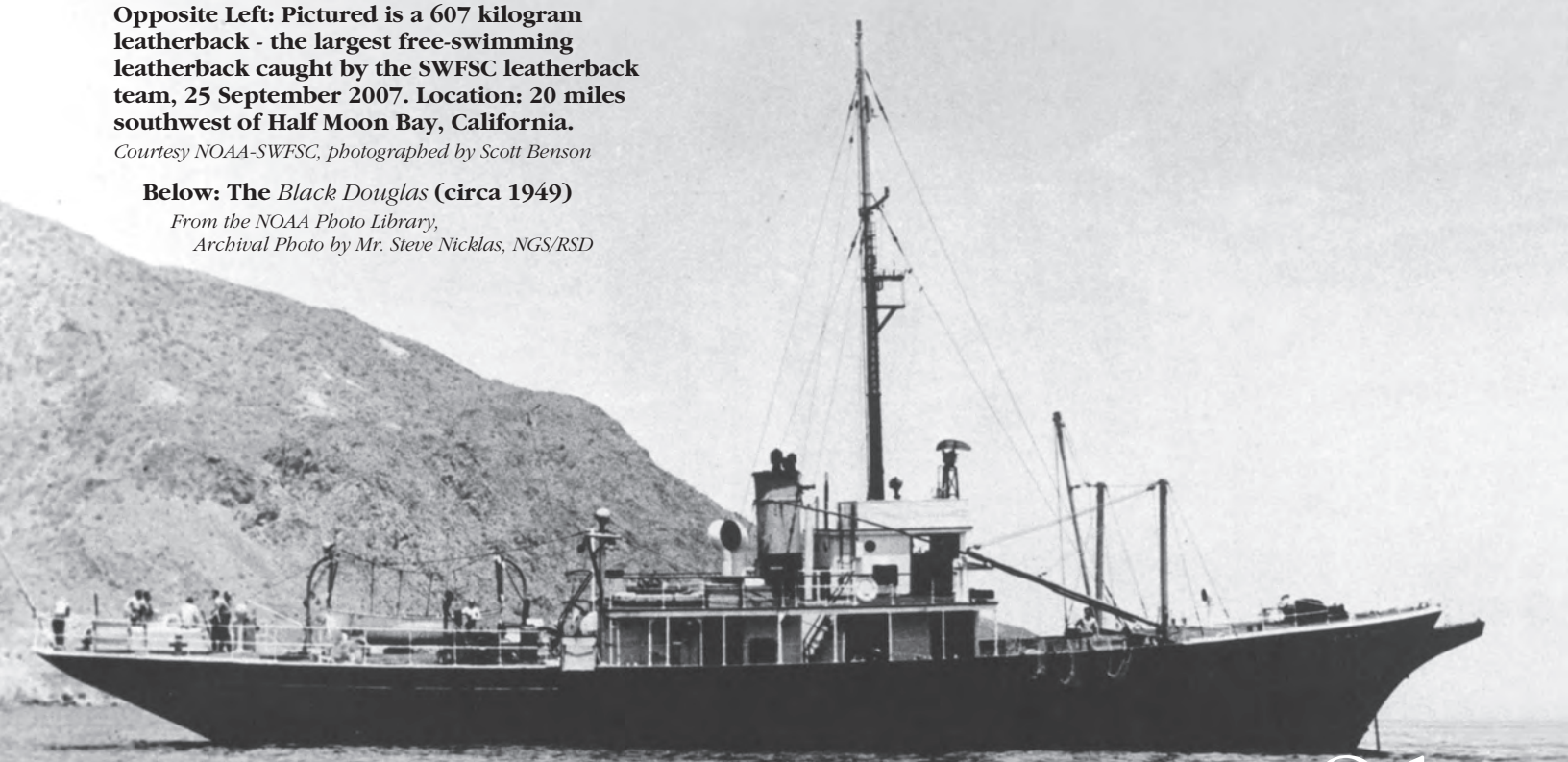
In the U.S., we have NOAA National Marine Fisheries Service (NOAA Fisheries Service), whose mission is to conserve, protect, and manage our living marine resources, to ensure they continue as functioning components of marine ecosystems, afford economic opportunities, and enhance the quality of life for the American public.[2] It has authority in the U.S. Exclusive Economic Zone (EEZ) waters, which extend from three to 200 nautical miles out to sea, and in regions where the U.S. has a vested interest. In California, the Southwest Fisheries Science Center (SWFSC) is a research arm of the NOAA Fisheries Service. We work to conserve, protect, and manage the living marine resources throughout the Pacific Ocean and the Southern Ocean off Antarctica through economic, biological, and oceanographic research. Those resources include harvested species such as fishes and invertebrates (e.g. market squid), and protected species such as whales, dolphins, penguins, seals and sea lions, marine turtles, seabirds, salmon, sturgeon and white abalone.

To manage these resources well, that is, to sustainably harvest marine resources and conserve protected and endangered species, we must know as much about them as possible, with as much accuracy as possible. This requires real-time data on these animals and the environment in which they live. The SWFSC accomplishes this stewardship primarily through research conducted on ships. NOAA Fisheries Service uses these ships to monitor and assess the status of fished and protected species and the data we collect provide the scientific basis for management advice.

Off California, two such vessels have afforded the acquisition of vast and important data, which NOAA Fisheries Service has used to conserve, protect, and manage our marine resources for over sixty years – the research vessel *Black Douglas* and the Fisheries survey vessel *David Starr Jordan*.

Opposite Left: Pictured is a 607 kilogram leatherback - the largest free-swimming leatherback caught by the SWFSC leatherback team, 25 September 2007. Location: 20 miles southwest of Half Moon Bay, California.
Courtesy NOAA-SWFSC, photographed by Scott Benson

Below: The *Black Douglas* (circa 1949)
From the NOAA Photo Library,
Archival Photo by Mr. Steve Nicklas, NGS/RSD



The predecessor to NOAA Fisheries Service was the Bureau of Commercial Fisheries (BCF). In San Diego, two BCF laboratories existed in the 1940s, the California Current Resources Laboratory and the Tuna Resources Laboratory. The missions of these research groups were to understand the impacts of the then major fishery on sardines and to study the tunas and tuna fishery in the Eastern Pacific Ocean, respectively. The *Black Douglas* was the first vessel used by SWFSC to conduct sardine research.[3]

The *Black Douglas* is a 175' three-masted schooner built at the Bath Iron Works of Maine, around 1930. She is one of the largest steel-hulled schooners ever built. Built for Robert Roebling, whose family built bridges, including the cable construction for the Brooklyn and Golden Gate Bridges, she initially served as a private yacht. Her next appointment was in the Aleutian Islands off Alaska for fur seal research. On her way there, Pearl Harbor was attacked and the Navy put her to work as a patrol boat instead. En route, off Oregon, a Japanese submarine lobbed a couple of shells across her bow and even fired a torpedo at her.[4]

She was unscathed, returned to finish the seal project after the war, and then arrived in San Diego in 1949, as the flagship for the California Cooperative Oceanic Fisheries Investigations (CalCOFI), a partnership between Scripps Institution of Oceanography, the Bureau of Commercial Fisheries and the California Department of Fish and Game. CalCOFI was formed that same year in order to study the ecological aspects of the collapse of the sardine

FSV *David Starr Jordan* ***in*** **1999**
From the NOAA photo library



population off California. Today its focus has expanded to the study of the marine environment off the coast of California.[5]

The *Black Douglas* was sold in 1966, after conducting more than 400,000 miles of research on over 100 CalCOFI cruises. She went on to hunt treasure in the Caribbean, serve as a floating classroom, and today is owned by the King of Morocco. The data she collected contributed (and continues to contribute) to our understanding of ocean dynamics and sustainable practices, some of which are detailed below.[6]

By the 1960s, the BCF research groups in La Jolla, California, required a ship with greater capabilities than the *Black Douglas*. The California Current Resources Group required a trawler for surveys of fish such as sardines and anchovies, and the Tuna Resources group required a long-range vessel for studies of tunas and dolphins throughout the Pacific. Thus, construction of the FSV *David Starr Jordan* was authorized by Congress in 1961 to replace the *Black Douglas*.[7]

The *Jordan* was completed in the fall of 1965, and sailed from Wisconsin through the St. Lawrence Seaway with the winter ice closing fast behind it. The vessels logbooks indicate that the crew had to chop ice from the superstructure in order for it to make its way through the Great Lakes. After stops in Woods Hole, Massachusetts, and Miami, Florida, the *Jordan* sailed through the Panama Canal and arrived in San Diego just before Christmas in 1965.[8]

The *David Starr Jordan* cost nearly $1.8 million, and is an all-steel vessel, 171' in length, with a 37' beam and 11' draft. It has twin diesel engines, 500 hp each giving the ship a 12-knot cruising speed. It was designed for work in temperate and tropical waters and is capable of conducting oceanographic and biological research. Initially built as a stern trawler, it has also been used for mid-water trawling, longlining, bottom trawling – nearly every kind of fishing method, except purse seining.[9]

The *Jordan* has many special capabilities, serving not just as a data collection platform, but also as a floating laboratory. It has, what was considered in 1965, a state-of-the-art sonar and echo-sounding system, underwater observation chambers in the bow and port side for studying fish behavior at sea, temperature controlled aquaria and live-specimen wells, a walk-in freezer for specimen storage, a photographic dark room, a scientific information center, and a data processing laboratory.[10]

The *Jordan*'s first cruise, in 1966, continued the work the *Black Douglas* had begun for CalCOFI. She completed 123 days at sea that year, collecting data on fish plankton physiology and dynamics.[11] The fish egg and larva data collected during these and subsequent cruises have provided insight into the fisheries off California and Baja California. For example, because of these sampling efforts, we can now identify ninety-nine percent of fish larvae in the California Current to genus or species.

Early on, the *Jordan* also participated in a program called EASTROPAC, a cooperative effort toward understanding the oceanography of the Eastern Tropical Pacific Ocean.[12] It was a multi-agency and multi-national effort which conducted a series of expeditions extending from the west coast of Mexico to the northern coast of Peru and west to the Galapagos Islands.[13]



Above & Below: The sardine industry in Monterey, California, before its eventual collapse in the 1950s. Today, sardines have rebounded and the fishery is managed under strict harvest guidelines.

From the NOAA photo library

These expeditions provided the first comprehensive understanding of how ocean conditions, such as temperature, direction of currents, salinity, etc., can vary seasonally in the Eastern Tropical Pacific. They also provided important baseline data for later investigations, including the World Ocean Circulation Experiment, which aims to "establish the role of the oceans in the earth's climate and to obtain a baseline dataset against which future change could be assessed."[14] EASTROPAC expeditions also contributed to our understanding of El Niño, and the program was the predecessor to a long-term tuna-dolphin research program still running today.

Research on the *Jordan* and the *Black Douglas* has contributed to explaining the collapse of the sardine fishery chronicled in Steinbeck's *Cannery Row*. Through the decades of CalCOFI cruises and the oceanography

data collected on them, scientists learned that the Pacific Decadal Oscillation (PDO), a long-lasting El Niño-like pattern of climate variation in the Pacific resulting in alternating periods of "cool" and "warm" waters in the California Current,[15] affects the balance of sardine and anchovy populations. During the warm-water regime, sardines dominate the populations; during the cold-water regimes, anchovy dominate. It was this natural fluctuation combined with human activities, like the overfishing Steinbeck chronicled, that caused the sardine fishery to fail in the 1950s. Today, as part of the CalCOFI cruises on the *Jordan,* we collect sardine samples (adult, juvenile and egg) and physical data (e.g. temperature, nutrients, chlorophyll concentration) of their environment which are used for annual assessments. Managers use these assessments to set annual harvest guidelines, or the amount of sardines that can be caught each year.[16] By using current data on the health of the sardine stock and what we've learned about its natural variations to set the harvest guideline, we hope to keep the population sustainable and avoid future collapse.

Protecting Dolphins

The SWFSC conducts regular cruises onboard the *Jordan* to assess the status of cetaceans (dolphins, whales and porpoises) in the California Current and Eastern Tropical Pacific. Distribution and abundance data collected by trained marine mammal observers on the ship, using "big eye" binoculars (25x power) and a towed acoustic array, and on helicopters or fixed-wing aircraft, provide annual assessments of these mammals in support of the Marine Mammal Protection Act, the Endangered Species Act, and the International Dolphin Conservation Program Act.[17] We use this information to understand trends in how

Federal Laws Mandating SWFSC Research

Fish and Wildlife Coordination Act (1934) authorizes NOAA Fisheries Service to collect fisheries data on environmental decisions which affect living marine resources.

Marine Mammal Protection Act (1972) regulates interactions with marine mammals.

Endangered Species Act (1973) protects species determined to be threatened or endangered.

Magnuson-Stevens Fishery Conservation and Management Act (1976) is the primary law governing marine fisheries management in United States federal waters.

International Dolphin Conservation Program Act (1997 Amendment to the Marine Mammal Protection Act) aims to reduce incidental dolphin mortalities in the ETP tuna purse-seine fishery.

For more information see:
www.nmfs.noaa.gov/regulations.htm

Below: SWFSC conducts surveys using "big-eye binoculars" to sight marine mammals.

Courtesy NOAA-SWFSC



the animals are doing, the extent of human-caused mortality (e.g. from bycatch), and the maximum number of individuals that can be removed from the stock while allowing it to remain at or above its optimum sustainable population level. If this number is exceeded, managers identify and implement measures to reduce mortality, whether they are changes to fishing methods, marine protected areas, etc.

Research aboard the *Jordan,* on the relationship between tuna and dolphins and the effect of the tuna fisheries on the mammals, has contributed to the greater than ninety-nine percent reduction in dolphin mortality in the tuna purse-seine fishery. The distribution and abundance data indicated that in the Eastern Tropical Pacific the practice of encircling dolphin pods with purse-seines in order to catch tuna was significantly and negatively affecting dolphin populations. While tuna fishermen tried to release the dolphins alive, millions of dolphins have died since purse seining began in the late 1950s. These findings led to management actions which prohibited the practice in the U.S. EEZ, an international dolphin conservation program, and eventually to the "Dolphin Safe" tunafish labels seen in almost every U.S. grocery store, indicating that the tuna is not caught using the dolphin-encirclement method. These various management actions combined with technological improvements in fishing and the increasing skills of captains and crews resulted in dolphin mortality declining to about 3,000 animals per year in the tuna purse-seine fishery.[18]

The SWFSC continues to collect data on dolphin abundance and distribution and conducts research to evaluate the effects of the fishery and conservation measures on dolphins. This long time-series not only enables SWFSC scientists to document trends in dolphin abundance over time – how we determine whether dolphin populations are recovering – but also enables investigation of the effects of climate change on the cetaceans.[19] More surveys and years of data will help explain why recovery has not yet occurred, and perhaps restore the protected stocks to their previous levels.



This label (and others like it) indicates that an approved observer from the International Dolphin Conservation Program was onboard the fishing vessel while it was fishing. For a can of tuna to receive the Dolphin Safe label, the observer must verify that no purse seine net was deployed or encircled dolphins during the entire trip, and that no dolphins were seriously injured or killed.

One Fish, Two Fish... Rockfish

Data collected on the *Jordan* contribute to assessements of about fifteen U.S. West Coast groundfish species, including several commercially and recreationally fished rockfish. These assessements have told us that six of these species – bocaccio and cowcod among them – are overfished, which by U.S. standards means they are at or below twenty-five percent of their unfished population. As part of the mandated effort to rebuild these overfished stocks, the Cowcod Conservation Area (CCA) was established off California in 2001. Rockfish fishing is prohibited in this 4,500 square mile area in an effort to protect the fish and allow them to rebuild their numbers.[20] However, there has to be a way to assess its efficacy.



Right: A photograph of a cowcod *(Sebastes levis)* **taken with the SWFSC Remotely Operated Vehicle.**
Courtesy NOAA-SWFSC, photographed by John Butler

Below: SWFSC deploys the Remotely Operated Vehicle from the FSV *David Starr Jordan* **during a rockfish survey cruise.**
Courtesy NOAA-SWFSC

The SWFSC deploys a Remotely Operated Vehicle (ROV) and underwater acoustics from the *Jordan* to assess the effectiveness. We use a 200 kHz multi-beam transducer to map the elevation of the seafloor, a multi-frequency echosounder to find the rockfish and estimate their numbers, and video and still cameras on the ROV to identify the fish. This combination of technology deployed from the *Jordan* enables us to collect data over large areas of the California Bight where the overfished species occur. We can then use the data for abundance estimates. Deploying this innovative combination of methods from the *Jordan* in the coming years will provide updates on how the stocks are doing and the efficacy of the CCA.[21]

What Have We Done For You Lately?

Science conducted onboard the *Jordan* has greatly expanded since the first CalCOFI cruises. Today, the vessel is typically at sea for about 230 days per year, up from 120 in 1966, one of the highest number of sea days for a NOAA vessel. It continues the CalCOFI cruises, now in their 59th year, approximately two months per year. From this ship, the SWFSC also spends four months conducting marine mammal studies, several weeks studying highly migratory species such as sharks, billfish and albacore, and around forty days on juvenile rockfish studies; the rest of the year is devoted to research on other species such as abalone, ocean salmon, and marine turtles.

In its lifspan as a research vessel, the FSV *David Starr Jordan* has spent an estimated 8,949 days at sea (DAS) and has sailed over 1.3 million miles of the Pacific Ocean between British Columbia and Mexico, and out to Tahiti, and south to Peru. Scientists have conducted at least 27,000 CTD casts for oceanography samples; 22,000 plankton tows; 4,700 fish trawls; counted 15,000 marine mammal schools, collected 35,000 flying fish, measured and weighed 1000 turtles, taken 27,000 photographs using ROVs, during almost 2000 hours underwater.[22]

Researchers have used traditional sampling methods and gear, and developed new techniques in order to continue the long time series of data which have been critical to managing the marine resources in the best possible way. For example, researchers used to collect oceanography data, such as temperature and salinity, with laboriously prepared Nansen bottles, but now use Conductivity-Temperature-Depth recorder casts. Since the 1990s scientists have used electronic tagging and tracking to understand the movements of species, varying from loggerhead turtles to bluefin sharks, who may travel within San Diego Bay, throughout the California Current, or across the Pacific. Aerial support in the form of helicopters and fixed-wing aircraft are often used in conjunction with the *Jordan* to provide concurrent sightings data for marine mammals such as dolphins. And among the newest technologies are remotely-operated and autonomous underwater vehicles, which are used to identify essential fish habitat or count the hard-to-find and endangered white abalone.



NOAA Fisheries tags a blue shark during a survey on the FSV *David Starr Jordan***. The shark was injected with oxytetracycline, which is used to measure age and growth. The shark carries roto tags (on its dorsal fin) and spaghetti tags, which are used to assess location and ocean characteristics, such as temperature.**

Courtesy NOAA-SWFSC

Data collected with these methods on the *Jordan* contribute to official population assessments of animals such as: sardine, anchovy, mackerel, market squid, krill, striped marlin, albacore, thresher, and mako sharks, along with over two dozen marine mammal stocks, ranging from minke whales to common dolphins, to harbor seals. These assessments tell us if the population is overfished (if a harvested species), the extent of human-caused mortality, or if a protected stock is recovering from overfishing, or the effects of being bycatch (marine mammals or endangered species). Managers use these data to determine how to sustainably harvest fished species, or conserve our protected species.

But all good things must end…The *David Starr Jordan* is due to retire in 2010, after forty-six years in government service and service to the ocean's resources. She has more than earned her government pension and has outlived her intended lifespan as a fishery research vessel.

What Next? A New Generation

A new technologically advanced research vessel, the FSV *Bell M. Shimada* is hoped to replace the *Jordan* and continue the *Black Douglas'* and the *Jordan's* work. At 209' she will be our largest vessel, to date, meaning more equipment and crew can be accommodated, which means more data can be collected. Among its advanced capabilities, the *Shimada* will emit little radiated noise (thereby affecting marine mammal and other animal behavior less), have dynamic positioning (thereby allowing operations at sea where mooring and anchoring are not possible), and an extensive array of acoustic transducers and other underway sensors already built in (alleviating the need to bring them on board for each research survey, as needed). She will be capable of deploying a wider size range of nets and other instrumentation. All these new bells and whistles will enable NOAA Fisheries Service to continue to conserve, protect and manage the living marine resources, as well as answer the unanswered questions.



Notes

1 FAO. 2007. *The State of the Word Fisheries and Aquaculture 2006.* Rome. http://www.fao.org/docrep/009/A0699e/A0699e00.htm

2 NMFS mission: http://www.nmfs.noaa.gov/aboutus.htm. NOAA's National Marine Fisheries Service is the federal agency, a division of the Department of Commerce, responsible for the stewardship of the nation's living marine resources and their habitat. NOAA's National Marine Fisheries Service is responsible for the management, conservation and protection of living marine resources within the United States' Exclusive Economic Zone (water three to 200 mile offshore).

3 Lillian L. Vlymen. 1989. *The First 25 Years*. NOAA Technical Memorandum NMFS. NOAA-TM-NMFS-SWFSC-134. 48 pp.

4 Ibid.

5 Ibid.

6 Ibid.

7 Ibid.

8 Ibid.

9 Ibid.

10 Ibid.

11 Elbert H. Ahlstrom. 1966. *Report of the Bureau of Commercial Fisheries California Current Resources Laboratory*. La Jolla, California. 5 pp.

12 Lillian L. Vlymen. 1989. *The First 25 Years*. NOAA Technical Memorandum NMFS. NOAA-TM-NMFS-SWFSC-134, 48 pp.

13 From SWFSC website: http://swfsc.noaa.gov/eastropac-atlas/. Accessed on 1/22/08.

14 From The World Ocean Circulation Experiment website: http://www.noc.soton.ac.uk/OTHERS/woceipo/. Accessed on 1/22/08

15 Schneider, N., Cornuelle, B.D., 2005. *The Forcing of the Pacific Decadal Oscillation*. Journal of Climate 18 (21), 4355–4373.

16 See: Kevin T. Hill, Emmanis Dorval, Nancy C. H. Lo, Beverly J. Macewicz, Christina Show, and Roberto Felix-Uraga. 2007. *Assessment of the Pacific sardine resource in 2007 for U.S. management in 2008*. Pacific Fishery Management Council. November 2007. 250 pp. For the most recent assessment and harvest guidelines.

17 The *DRAFT U.S. Pacific Marine Mammal Stock Assessments: 2007* by James V. Carretta, Karin A. Forney, Mark S. Lowry, Jay Barlow, Jason Baker, Brad Hanson, and Marcia M. Muto has the most up-to-date assessment status of each species the SWFSC assesses. More information can be found at: http://swfsc.noaa.gov/textblock.aspx?Division=PRD&ParentMenuId=148&id=1247

18 From: http://swfsc.noaa.gov/textblock.aspx?Division=PRD&ParentMenuId=248&id=1408 and W. F. Perrin, B. Wursig and J. G. M. Thewissen, eds. *Encyclopedia of Marine Mammals*. Academic Press, San Diego, California, p.1269-1273. 2002.
More information on the dolphin decline and non-recovery can be found in: *Gerrodette, T., G. M. Watters, and J. Forcada. 2005. Preliminary estimates of 2003 dolphin abundance in the Eastern Tropical Pacific.* Southwest Fisheries Science Center, Administrative Report LJ-05-05, 26 p. (at http://swfsc.noaa.gov/uploadedFiles/Divisions/PRD/Programs/ETP_Cetacean_Assessment/Gerrodetteetal2005.pdf); and Wade, P. R., Watters, G. M., Gerrodette, T., and Reilly, S. B. (2007). *Depletion of spotted and spinner dolphins in the Eastern Tropical Pacific: modeling hypotheses for their lack of recovery*. Marine Ecology Progress Series. 343, 1-14. (at http://www.int-res.com/articles/feature/m343p001.pdf)

19 Wade, P. R., Watters, G. M., Gerrodette, T., and Reilly, S. B. 2007. *Depletion of spotted and spinner dolphins in the Eastern Tropical Pacific: modeling hypotheses for their lack of recovery*. Marine Ecology Progress Series 343, 1-14.

20 Sarah M. Shoffler. 2004. *One fish, two fish: a new approach to monitoring rockfish populations*. Pacific Coast Sportfishing. Pp 58-64.

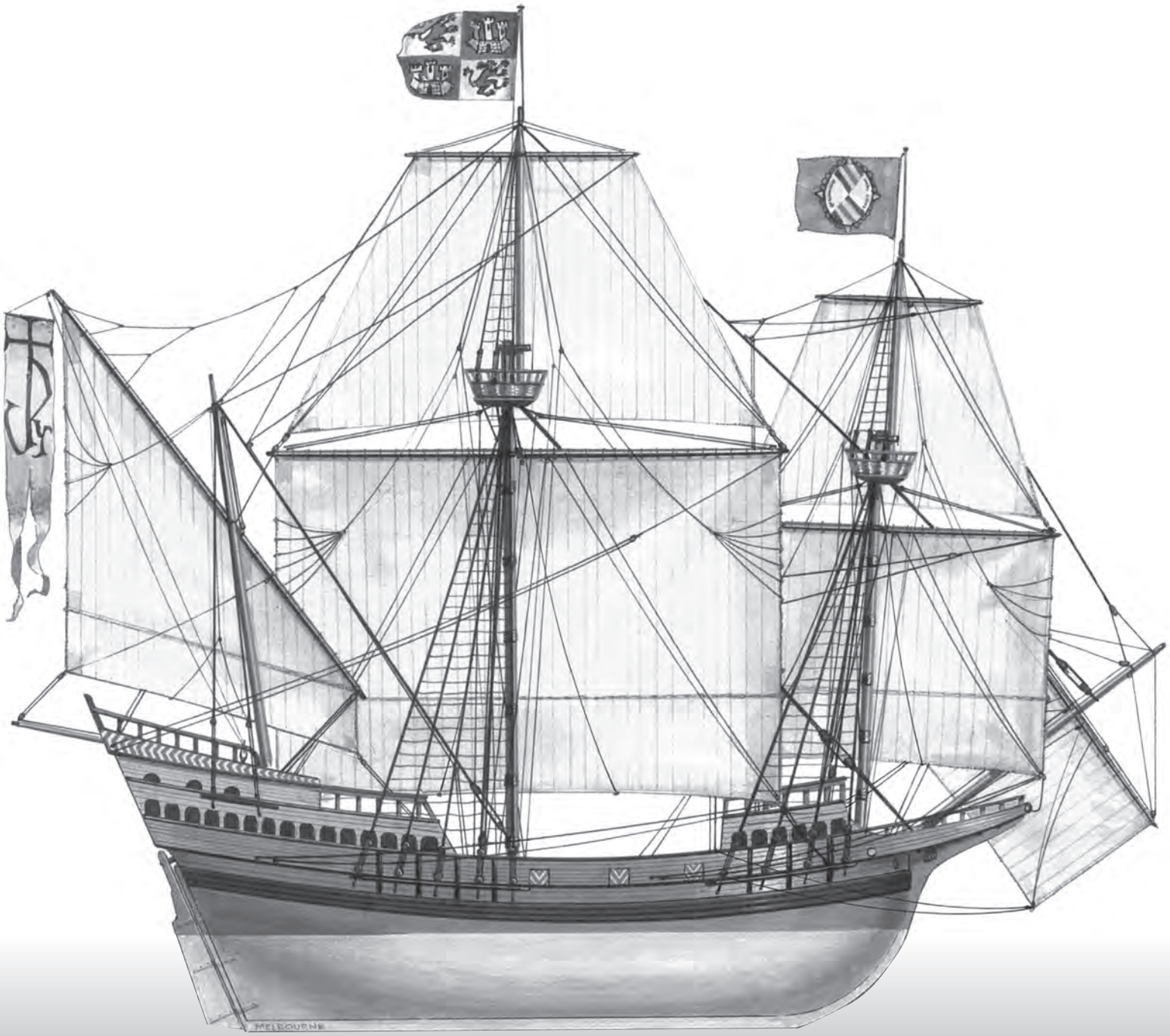
21 To learn more about rockfish research go to the SWFSC website: http://swfsc.noaa.gov/textblock.aspx?Division=FRD&ParentMenuID=190&id=1291

22 Data estimates were from a personal communication with Richard Charter, NOAA/NMFS/SWFSC, La Jolla, CA. 21 September 2008.

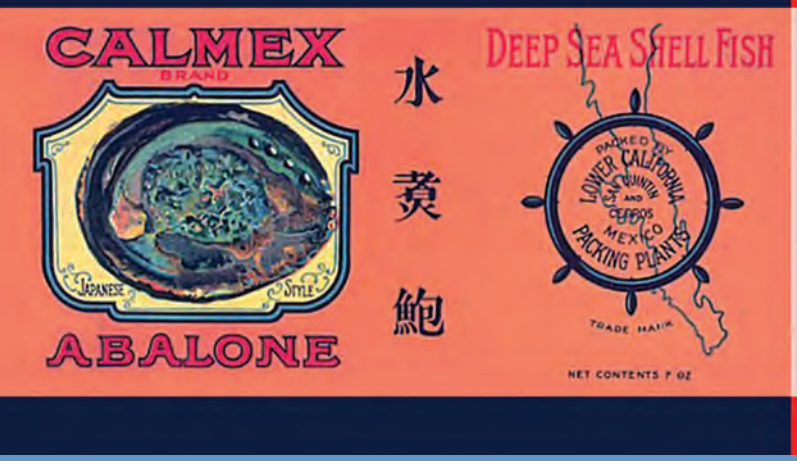
Spinner dolphin *(Stenella longirostris)* **in the Eastern Tropical Pacific. Photo taken during SWFSC marine mammal cruise.**

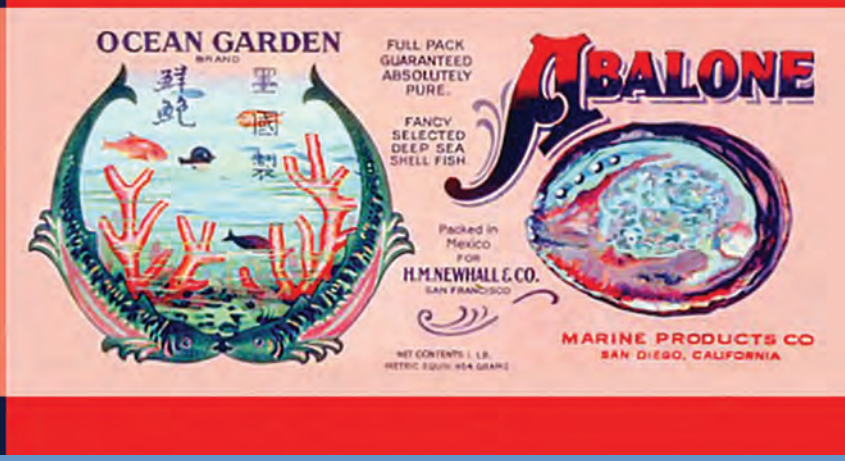
Courtesy NOAA-SWFSC

We are proud to present A Voyage of Discovery aboard Juan Rodriguez Cabrillo's, San Salvador, approaching our shores in the upcoming issue of Mains'l Haul.



San Salvador **as rendered by Melbourne Smith.**





Fabio Martinez photographed this view from Punta Eugenia, Baja California Sur, looking toward Cedros Island on the horizon.



The Tall Ships are on the Horizon

Photo by Neva Sullaway

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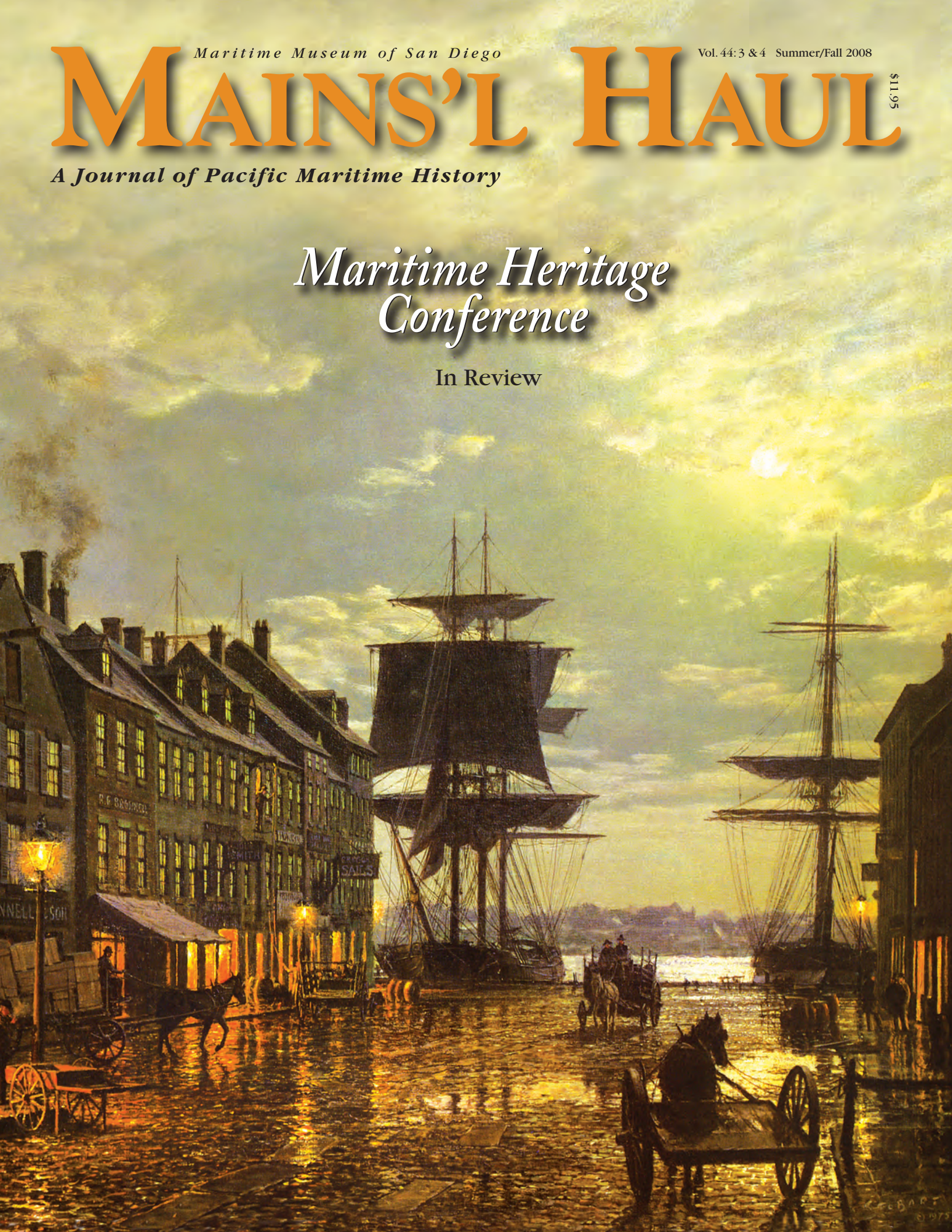
Vol. 44: 3 & 4 Summer/Fall 2008

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A Journal of Pacific Maritime History

Maritime Heritage Conference

In Review



Above: In this painting by Richard DeRosset titled "Opening Day, October 28, 1886," DeRosset captures the heart of New York's seafaring history with ships of all types, moving in all directions, reinforcing the centrifugal movement of maritime activities in that era. As a nationally recognized maritime artist and official artist for the MMSD, Richard DeRosset has had his work exhibited throughout the United States and currently has a fine selection of paintings on exhibit onboard the Maritime Museum's *Star of India.*

Front Cover: The Maritime Museum of San Diego is most grateful for permission to reproduce John Stobart's "Maiden Lane, NY, circa 1800." While illustrating Peter Stanford's article, "The Ship at the End of the Street" (pgs. 16-23), Stobart's vantage pulls the viewer into the 1800s and the wharfage area of New York. Maiden Lane, leading down to South Street, was the hub of enterprises that served the shipping industry: sailmakers, coopers, ironmongers, and paint-sellers were all a part of the lane's view toward the waterfront.



John Stobart

As explained on pg. 23, internationally renowned maritime artist, John Stobart, has contributed his talent in a stunning "Marriage of Art and History," in a new book, *John Stobart and the Ships of South Street,* published by the National Maritime Historical Society (June 2008). The fervent hope is that through his work, and with the efforts of the NMHS, attention will once again be drawn to the era of great sailing ships and to the dire need to save those that have survived to this day. While Stobart has managed skillfully to keep the ships alive on canvas, it is our mission to unfurl the canvas and keep our ships sailing.

— the editor

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MAINS'L HAUL is published by the Maritime Museum of San Diego, wind and weather permitting, aboard the ferryboat *Berkeley*.

MAINSAIL HAUL—An order in tacking ship bidding, "Swing the main yards."

Maritime Museum of San Diego

MAINS'L HAUL

A Journal of Pacific Maritime History

Vol. 44: 3 & 4 Summer/Fall 2008

Maritime Heritage Conference

2 
Ray Ashley, Ph.D.
From the Helm

4 
Neva Sullaway
Acknowledgements

6 

MHC Publications

8 
Lord Greenway, World Ship Trust
Ship Preservation in the UK

16 
Peter Stanford
What the Historic Ship Can Do For Us in Her Voyage through Time

24 
Joost C. A. Schokkenbroek, Ph.D.
The National Maritime Museum Amsterdam And Its Course After 2010

32 
Alex Roland, Ph.D.
Reenvisioning American Maritime History

40 
Victor Kvachidze and Evguenia Anichenko
Submerged Cultural Heritage of the Caspian Sea

50 
Evguenia Anichenko
Tribute to Viktor Kvachidze

52 
Jim Cassidy, M.P.A, Ph.D., R.P.A.
The First Mariners of the New World

60 
William N. Tunnell, Jr., Jeffrey S. Nilsson and Frank V. Thompson
Historic Naval Ships Association

64 
Joe Cocking with the assistance of Kim Fahlen
American Lighthouse Coordinating Committee

70 
Deb Dominici, Dave Easter and Jerry Newton
A Living Museum of Vessels from the Golden Age of Yachting

77 
Tom Jackson
An Ancient Mariner Restores his Classic Yacht *Scamp*

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Our mission is to engage members and the public in the study of maritime history, while promoting scholarly research. We welcome submissions on all aspects of the Pacific's past, and encourage a wide variety of perspectives on this rich heritage. Articles are indexed for researchers worldwide at **www.sdmaritime.org** under Publications, *Mains'l Haul*, and in *America: History & Life and Historical Abstracts*. ISSN# 1540-3386

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FROM THE HELM

by Ray Ashley, Ph.D.

President and CEO,
Maritime Museum of San Diego

Without at first intending to, San Diegans have been among the world's foremost caretakers of maritime heritage for four generations. One of the earliest examples of preserving an historic ship, not because of any connection to great persons or events, but because of an entire age she could symbolize, came in 1927 when the *Star of India* appeared on San Diego's waterfront. Initially she was conceived simply as a waterfront ornament and prospective centerpiece to an aquarium, but in subsequent decades she would become in succession: a curiosity, a derelict, public embarrassment, large scale civic preservation project, museum gallery, iconic representation of community identity, educational facility, and as the world's oldest active vessel, an internationally recognized object of inspiration. One day she may acquire that rarest and most elevated of distinctions, a World Heritage Site, and if that happens, *Star of India* will become, perhaps, San Diego's emblem recognized by millions of people around the world. And rightfully so, for the *Star of India* has been the starting point around which we have woven history into the fabric of our community soul.

San Diego's venture into the maritime heritage business has, of course, expanded beyond the scope of a single ship to include one of the most elegant steamers ever to sail the inland waterways of America, a distinquished steam yacht of the gilded age, a pilot vessel whose continuing career overlaps the entirety of San Diego's maritime industrial history, historic fishing vessels and yachts, and a submarine which once may have lurked off the approaches to San Diego Bay observing and cataloging the characteristics of U.S. Navy vessels it might have been obliged to engage in battle. Replica tall ships, including the state tall ship *Californian*, sail from our waterfront to evoke the Gold Rush, early days of statehood, and the Civil War, and HMS *Surprise,* an 18th century frigate of 24 guns, recalls the great Pacific voyages of the Enlightenment which led to the founding of San Diego and California. In due time, they will be joined by *San Salvador*, another replica that enshrines our "origin story" at the dawn of the scientific revolution and early modern era. The Point Loma Lighthouse, now the identity piece of a national monument, is not only the architectural symbol of our maritime past, but is unquestionably one of our most beloved buildings.

In keeping with its history as a Navy town and the beginnings of naval aviation, San Diego has installed the aircraft



carrier USS *Midway* as an impressive museum and memorial and, as we go to press, we've learned San Diego will also soon be a permanent home to USS *Dolphin,* a technological waypoint in the development of the modern submarine with the longest San Diego career of any naval vessel extant. Going beyond institutions, San Diego is also home to one of the world's greatest collections of classic and historic watercraft owned, cared for, exhibited, and sailed by individuals who take the preservation of history as their aesthetic calling.

Thus it was appropriate that the first International Maritime Heritage Conference ever to be held on the West Coast of the United States was hosted by the Port of San Diego, NOAA, the Maritime Museum of San Diego, and USS *Midway* in October 2007. Scholars, curators, prominent authors, preservationists, archeologists, artists, folk historians, boat- and shipbuilders, and museum directors came from around the world to confer, present papers, and celebrate the international movement to enshrine our maritime heritage. Dozens of organizations ranging from the Historic Naval Ship Association to the Museum Small Craft Association, including the North American Society of Oceanic History, the Council of American Maritime Museums, several lighthouse heritage organizations, the Navy League, the National Park Service, and the San Diego Ancient Mariners were represented. NOAA, the leading scientific agency in the U.S., dedicated to understanding and preserving the health and heritage of the oceans, was prolific in contributing to the proceedings. Two prominent award-winning historians gave keynote addresses. The greatest maritime museums in the world sent their leaders. The world's foremost international organization, the World Ship Trust, dedicated to the preservation of the great historic ships, presented a prestigious award to the *Lane Victory*, which steamed from Los Angeles to San Diego for the occasion, bringing with her a goodly number of conference attendees. Spanning the walk from the *Lane Victory* to the *Midway*, no waterfront in the world ever boasted a greater and more diverse assemblage of historic vessels.

The ships themselves were the stars of the show. But, unique in the history of this conference, they were also the afloat setting for hundreds of talks, presentations, demonstrations, exhibitions, awards, receptions, conferences, and other forays into our maritime past. This *Mains'l Haul*, in keeping with our nation's foremost scholarly journal devoted to maritime history, is proud to recall that week and present this small selection of its varied expressions for your consideration.

Photo by Tim Runyan, NOAA, Maritime Heritage Program



Acknowledgements

Our first level of thanks goes to all those who helped make the Eighth Maritime Heritage Conference a tremendous success.

From the behind-the-scenes efforts of all Maritime Museum, USS *Midway* and SS *Lane Victory* staff and volunteers, to our major sponsors including the Unified Port of San Diego, the National Oceanic and Atmospheric Administration (NOAA), the National Maritime Historical Society and Hornblower Cruises & Events; the Conference was an informative, dynamic forum for maritime historians, researchers, and students – all those interested in the myriad facets of our maritime heritage.

A *Call for Papers* went out to all disciplines and we are pleased to present a small selection from the conference panel topics in this issue of *Mains'l Haul*. Several areas of discussion are notably absent from this issue in anticipation of further issues based on focused maritime topics.

My sincere hope is that you will enjoy this overview of the Maritime Heritage Conference with the understanding that with nearly eighty papers presented, we have barely touched upon the breadth and depth of our Pacific maritime studies.

With Gratitude,
Neva Sullaway, editor



Major funding provided by the City of San Diego Commission for Arts and Culture.

To the Maritime Museum of San Diego Members and Conference Attendees,

The excitement generated in San Diego at the Eighth Maritime Heritage Conference was fueled by the majestic backdrop of the Maritime Museum's historic tall ships, the aircraft carrier USS Midway*, and the WWII transport* Lane Victory*. All conference sessions were held aboard ships, making this a floating conference. This unique aspect of the triennial conference was reason enough for the National Oceanic and Atmospheric Administration to be enthusiastic about participating. But the more compelling reason is our commitment to maritime heritage.*

The NOAA Office of National Marine Sanctuaries includes the Maritime Heritage Program. The program's mission is to research, manage, preserve and protect maritime heritage resources. It is also charged to share its knowledge through education and outreach. The conference provided the opportunity to fulfill these obligations. It was also the occasion for NOAA to acknowledge that maritime cultural and environmental resources were equally valued.

The expression "maritime heritage" encompasses all aspects of the maritime world involving humans. This includes maritime history, underwater archaeology, traditional arts and crafts, sail training, coastal communities, indigenous cultures, lighthouses, lifesaving stations, historic vessels, law, navigation, technology, and many other subjects. All of these were on stage at the conference and I am delighted that NOAA colleagues provided many of the presentations.

Why does NOAA have such a strong interest in maritime heritage? One reason is the body of legislation that obliges the agency to inventory and administer those maritime and cultural resources within its authority. Examples include the National Marine Sanctuaries Act, the National Historic Preservation Act, and the Abandoned Shipwreck Act. Another reason is the necessity to work and team with others to accomplish that task, as well as the need to study their research and experiences to inform our own efforts. And we need to acquire new information in order to better manage maritime heritage resources.

The National Oceanic and Atmospheric Administration was created in 1970, incorporating the National Weather Service and the National Marine Fisheries Service, but its roots are in the establishment of the Coast Survey by Thomas Jefferson in 1807. The Coast Survey became part of NOAA (see Mains'l Haul*, V.42: 2&3, Timeline, pp 68-71). This made the 2007 conference in San Diego a special occasion as NOAA celebrated its 200th anniversary. That evolution and growth is reflected in the continuing expansion of the National Marine Sanctuaries System, which now includes over 150,000 square miles of oceans and lakes in fourteen sites, stretching from Hawaii to Massachusetts, and from Florida to the Great Lakes.*

America's emergence as a nation is largely a tale of the sea and inland waters. But the maritime heritage of the indigenous peoples extends back thousands of years. We are all dependent on the ocean and lakes, including the sea floor and bottomlands. They provide food, water, energy, avenues for commerce and trade, and drive the global climate. They link together continents, peoples and cultures. This diversity of subject matter and geography is what makes maritime studies such a vibrant and challenging field.

The staff of the Maritime Museum of San Diego is to be congratulated for a spectacular job as hosts of the Maritime Heritage Conference. And we can all look forward to continuing our conversation at the ninth triennial conference, to be held in Fall 2010, in Baltimore, Maryland.

— Tim Runyan

Timothy J. Runyan, Ph.D.
Manager, Maritime Heritage Program
Office of National Marine Sanctuaries
National Oceanic and Atmospheric Administration



Publications featured at the Eighth Maritime Heritage Conference

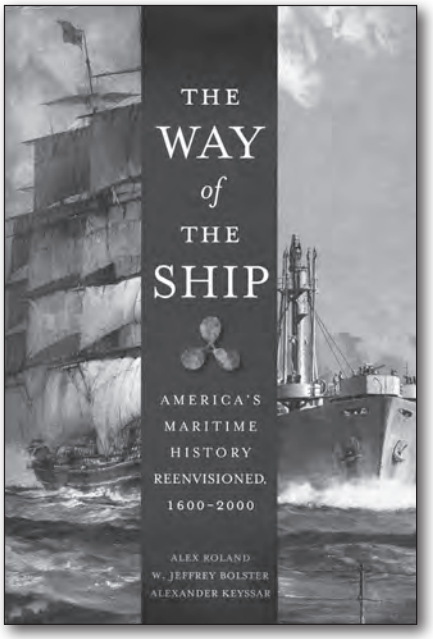
Available in bookstores, online, or direct from the Publisher

The Way of the Ship

America's Maritime History Reenvisioned, 1600-2000

Alex Roland,
W. Jeffrey Bolster,
Alexander Keyssar

John Wiley & Sons,
Hoboken,
New Jersey, 2008



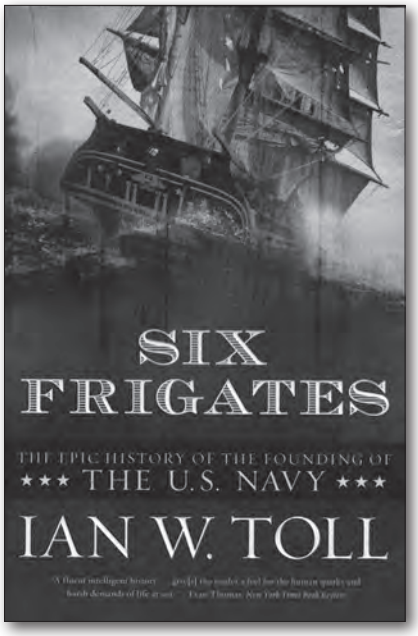
The Way of the Ship **offers a global perspective and considers both oceanic shipping and domestic shipping along America's coasts and inland waterways, with explanations of the forces that influenced the way of the ship. The result is an eye-opening, authoritative look at American maritime history, and the ways it helped shape the nation's history.**

Six Frigates

The Epic History of the Founding of the U.S. Navy

Ian W. Toll

W.W. Norton
& Company,
New York, London,
2006, 2008



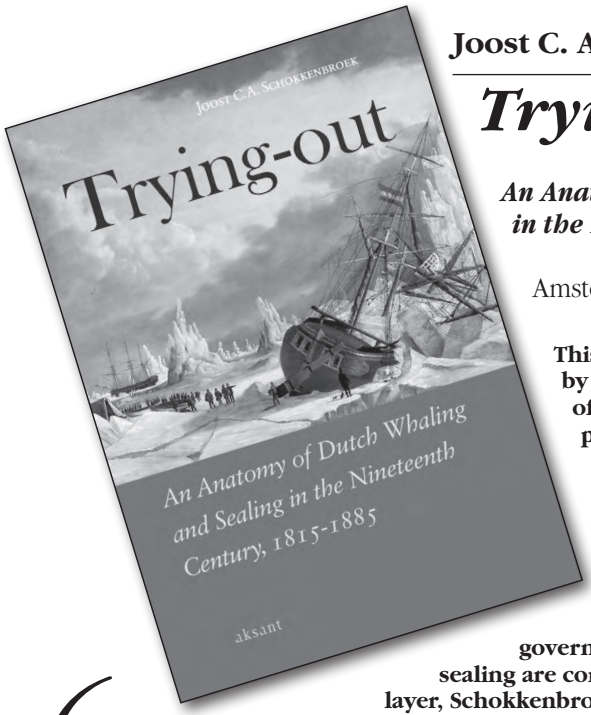
From the decision to build six heavy frigates, through the cliff-hanger campaign against Tripoli, to the war that shook the world in 1812, Ian Toll tells this grand tale with the political insight of ***Founding Brothers*** **and the narrative flair of Patrick O'Brian.**

Joost C. A. Schokkenbroek

Trying out

An Anatomy of Dutch Whaling and Sealing in the Nineteenth Century, 1815-1885

Amsterdam, Aksant Academic Publishers, 2008



This study describes and analyses a wide array of initiatives leading to the hunt, by Dutch whalemen, of whales and seals in Arctic waters, the temperate zones of the South Pacific and the waters of the Dutch East Indies during the major part of the nineteenth century (1815-1885) – an era neglected so far.

In his pioneering book the author, Curator at the National Maritime Museum Amsterdam, focuses on the men involved in the two maritime industries, be it on shore or aboard the whaleship, or as entrepreneur and whaleship owner, Inn keeper, public notary, client for whale and seal products or, of course, as whaleman and seal hunter. Research conducted in many diverse and hitherto relatively uncharted archives brings to the fore the organisation and scope of financial involvement from the national government. Dutch socio-economic and maritime developments in whaling and sealing are compared with international developments in these fields. Peeling layer after layer, Schokkenbroek reveals the back bones of the two maritime industries. As such, *Trying-out* **is what it stands for - an anatomy of whaling and sealing in the nineteenth century.**

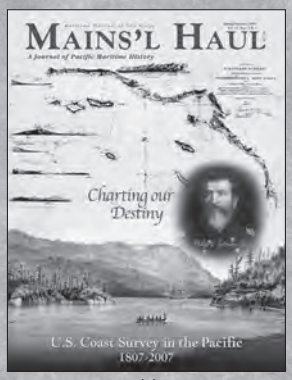
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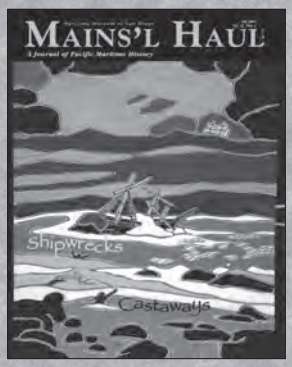
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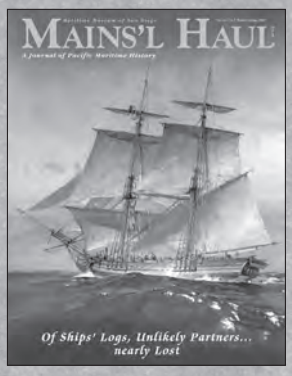
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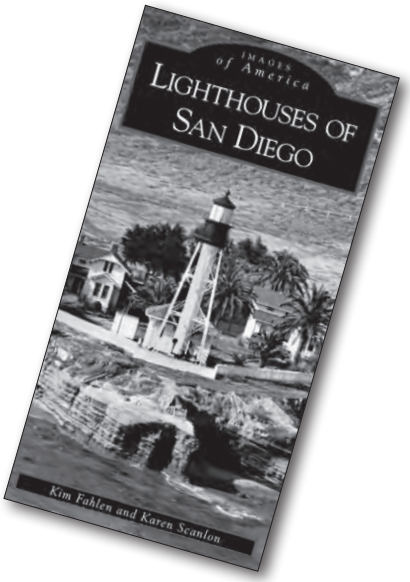
Each *Mains'l Haul* issue is devoted to a different aspect of the Pacific's past. Copies of the reprints above, plus back issues devoted to subjects including historic ships, Pacific Trade, and Spanish explorers, are also available at

www.sdmaritime.org

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Lighthouses of San Diego

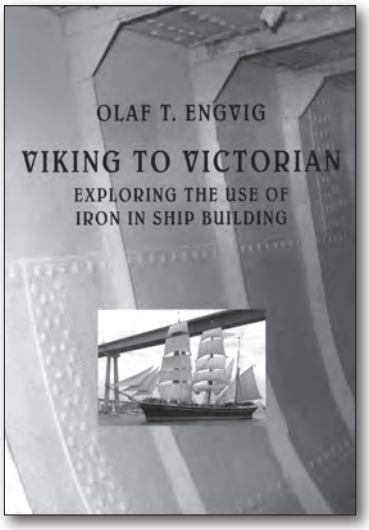


Kim Fahlen and Karen Scanlon

Arcadia Publishing, 2008

***Lighthouses of San Diego* offers a fresh glimpse of the famous Point Loma Lighthouse as well as the lesser known lighthouses of Ballast Point and lower Point Loma (front cover) and others, thanks to the memories and photographs belonging to the families of the men who kept the lights burning. Archival photos are joined with community history in this informative edition.**

Viking to Victorian



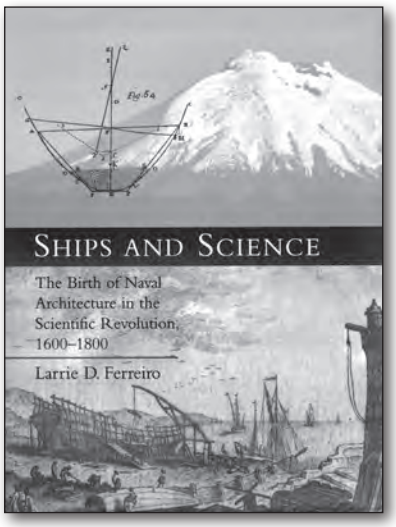
Exploring the use of Iron in Ship Building

Olaf T. Engvig

Themo Publishing, Los Angeles, 2006

***Viking to Victorian* explores the use of iron in shipbuilding, from the Viking Age until the 1880s, when iron was abandoned in ship construction. The saving of historical ships built with the use of iron (i.e. *Star of India*) is emphasized. This book is a unique synthesis of practical and academic knowledge. It is the ultimate guide to the understanding and protection of historic artifacts of iron.**

Ships and Science



The Birth of Naval Architecture in the Scientific Revolution, 1600-1800

Larrie D. Ferreiro

The MIT Press, Cambridge, Massachusetts; London, England, 2007

Ferreiro describes the formulation of the three major elements of ship theory: maneuvering and sail theory, ship resistance and hydrodynamics, and stability theory. He considers the era's influential books on naval architecture and describes the "professionalization" of ship constructors that is the true legacy of this period. Finally, looking from the viewpoints of both the constructor and the naval administrator, he explains why the development of ship theory was encouraged, financed, and used in naval shipbuilding. A generous selection of rarely seen archival images accompanies the text.

Ship Preservation in the UK

Three Major Projects: *Mary Rose, SS Great Britain, Cutty Sark*



Photo by Maggie Piatt-Walton, MMSD

. . . I want the child to go aboard . . . and be able to stand by the wheel . . . and imagine her at sea. That is why, to me, preserved historic ships, if they are exhibited with imagination, are the cathedrals of the sea . . .

– Frank Carr

By Lord Greenway, Chairman, World Ship Trust

Lord Greenway (far right) presented the World Ship Trust Award to Captain Itson of the SS *Lane Victory* in recognition of the ship's longevity and outstanding service as one of the last surviving World War II Victory ships. Looking on is California Assemblyman Martin Garrick. Lord Greenway attended the five-day Conference in San Diego and gave the following presentation.

By way of introduction, perhaps I should explain a little about the World Ship Trust which was founded in 1979 by Frank Carr, Director of the National Maritime Museum at Greenwich. The idea first formed from his horror at the scuttling in 1949 of HMS *Implacable*, formerly the French 74-gun *Duguay Trouin* captured at the Battle of Trafalgar. She had been neglected to a state where restoration was sadly out of the question, but Carr resolved that such things should never be allowed to happen again. Hence the logo of the Trust depicts the stern of HMS *Implacable* above the words ***Never Again***.

Another reason behind Carr's thinking was to educate future generations of the importance of certain ships and to enable young people to stand at the wheel and imagine what it must have been like to sail in them.

The aim of the Trust therefore is to encourage the preservation of old ships worldwide and from time to time it makes awards in recognition of excellence. These fall into three categories: Maritime Heritage Awards, Special Awards and Individual Awards.

Recent presentations of the former have included HMS *Victory* by HRH Prince Philip, Duke of Edinburgh, and the 4-masted barque *Pommer* by President Halonen of Finland.

The Trust also produces a quarterly Review and maintains a register of all preserved ships. This has been produced in book form until now, but will soon be available to members on our website: www.worldshiptrust.org.

Turning now to the main subject of my paper, this concerns the latest situation regarding the preservation of three major historic ships in the United Kingdom: *Mary Rose*, *Great Britain* and *Cutty Sark*.

Mary Rose

Mary Rose was King Henry VIII's favourite warship and had served for some thirty years before that fateful day on 19 July 1545

Lord (Ambrose) **Greenway** **has been an independent member of the House of Lords since 1975. Specializing in maritime affairs, he is Joint Chairman of the Parliamentary Maritime Group and Commodore of the House of Lords Yacht Club.**

He is currently Chairman of the World Ship Trust, Chairman of the Massey Shaw & Marine Vessels Preservation Society and Chairman of the Memorial Fund of the Institute of Marine Engineering, Science and Technology. Past appointments include Chairman/The Marine Society (1994-2000), President/Cruise Europe (1995-2003) and Chairman/The Sail Training Association (2001-2004).

He is an Elder Brother of Trinity House and a Council Member of the Royal National Lifeboat Institution.

when, under the watchful eye of her Sovereign, she sailed out to meet a French invasion fleet arrayed in Bembridge Roads off the Isle of Wight. No one knows exactly what happened, but she heeled when her sails were unfurled and water flooded into her open gunports, causing her to capsize and sink along with most of her 500 crew.

The wreck was plundered in the 1830s and then her hull was abandoned to the Solent mud where it lay until the first timber was discovered in May 1970. Following extensive underwater excavation in the 1970s, the remaining starboard side of the hull was encased in a steel cradle and raised by the lifting barge *Tog Mor* in October 1982, watched live by a television audience of 60 million around the world.

The hull was placed in an old drydock in Portsmouth Historic Dockyard, close to where she was originally built, and the process of the timber preservation began. This involved twenty years of spraying with fresh chilled water, followed by a further ten years using diluted Polyethylene Glycol (PEG), at a cost of £5.5 million, and finally a drying process. During the interim stage which is still continuing, it was discovered that sulphate



After twenty years of spraying the hull of *Mary Rose* with fresh chilled water, a further ten years of spraying with Polyethylene Glycol (PEG) followed in an attempt to preserve her remaining hull.
Photograph by Lord Greenway



A Tudor sword was among the more than 20,000 artefacts brought up from the *Mary Rose* **wreck site.**
Courtesy the Mary Rose *Trust*

salts in the timbers were oxidizing into extremely damaging sulphuric acid in the presence of iron, a reaction that had also been found to be affecting the *Wasa* in Stockholm. Unlike *Mary Rose*, *Wasa* is an intact hull built some 100 years later, but she had little in the way of artefacts aboard when she sank soon after completion. Her washing process was considerably shorter than that planned for *Mary Rose* and as a result the deterioration of some of her timbers is now a major cause for concern. The Trustees have sought help from the *Mary Rose* team who lead the world in the preservation of old timbers and other materials as a result of their work.

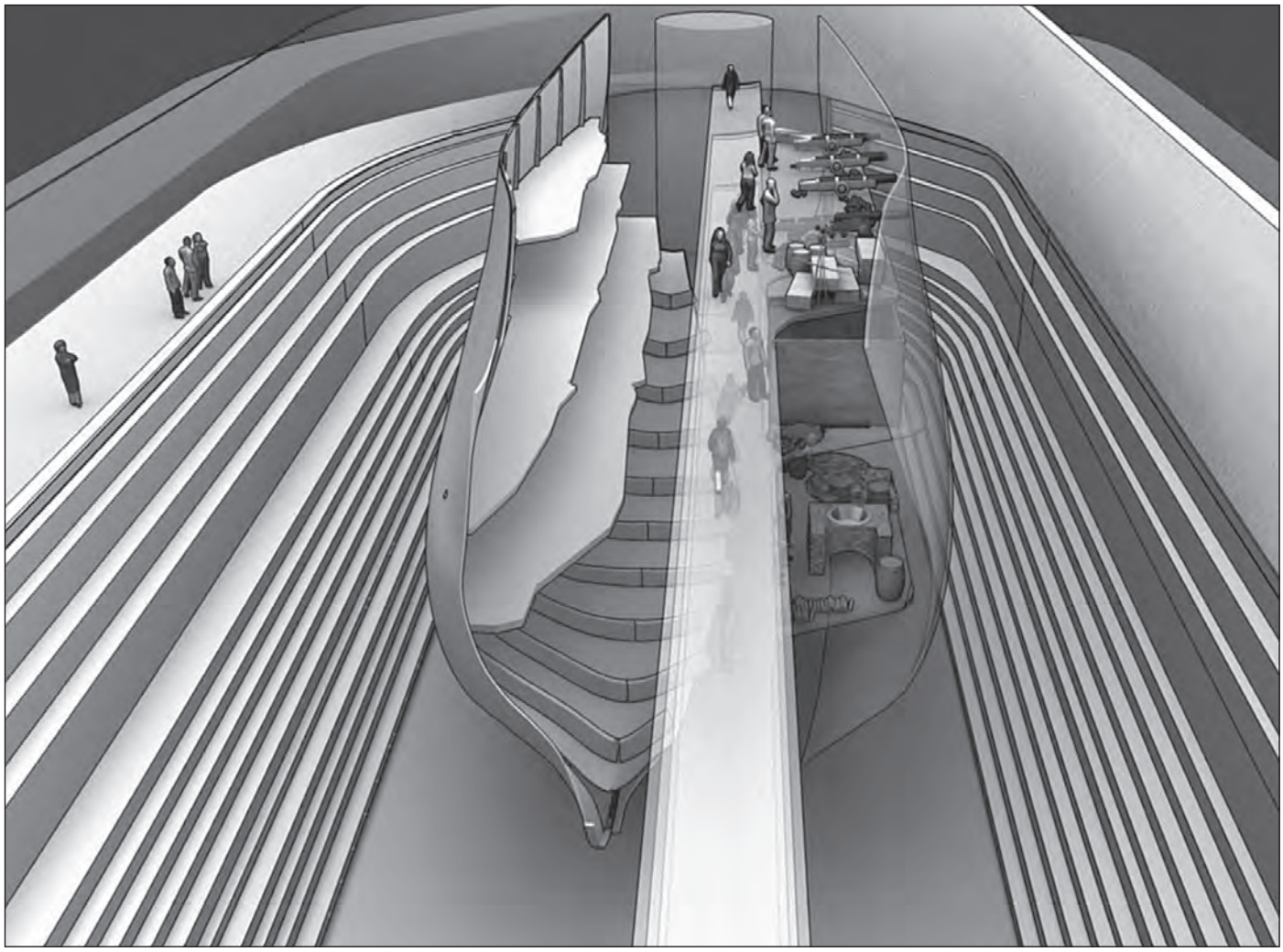
In addition to *Mary Rose's* surviving starboard side, in excess of 20,000 artefacts have been brought up from the wreck site, ranging from long bows to personal effects and from navigational instruments to eating utensils. They form a unique time capsule into Tudor life at all levels of society. A selection is on public view in a temporary museum adjacent to the hull, which is now in an upright position and can be viewed whilst the spraying process continues.

Apart from the ongoing preservation work, long-term plans of the *Mary Rose* Trust envisage a £35 million sensational and sustainable museum where *Mary Rose* and her artefacts will tell their unique stories. A central walkway will allow visitors to compare the surviving part of the ship on the one side with a stylized re-creation on the other, which will contain many of the salvaged and restored artefacts. The new building is shaped like an ark and will include space for corporate entertainment purposes as a means of generating money, as well as hands-on educational facilities to teach young people the importance of marine conservation.

The Heritage Lottery Fund (HLF), a body set up by the UK Government in 1994 to help distribute part of the proceeds of the National Lottery to deserving projects in the arts and heritage field, has already made a substantial grant to *Mary Rose*, which has to be matched from public donations, and the Trustees are currently preparing a second bid for lottery funds which, if unsuccessful, could well jeopardize the survival of the ship.

Note: *Since my presentation, the HLF announced a further £21 million grant in January 2008, which effectively secures the preservation of* Mary Rose *and allows the museum plan to proceed, however, the outstanding sum of £14 million still needs to be found by 2011.*

As the Trust puts it, *Mary Rose* is a key ship, of a key king, and yet she illuminates sixteenth century life from all levels of society at one dramatic moment in time.

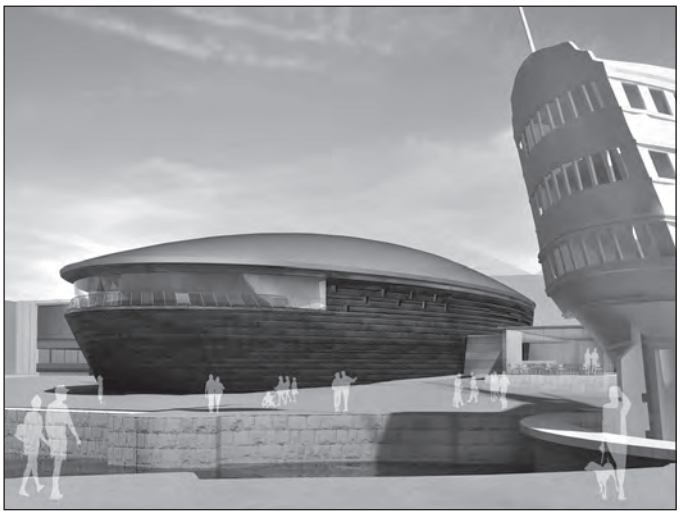


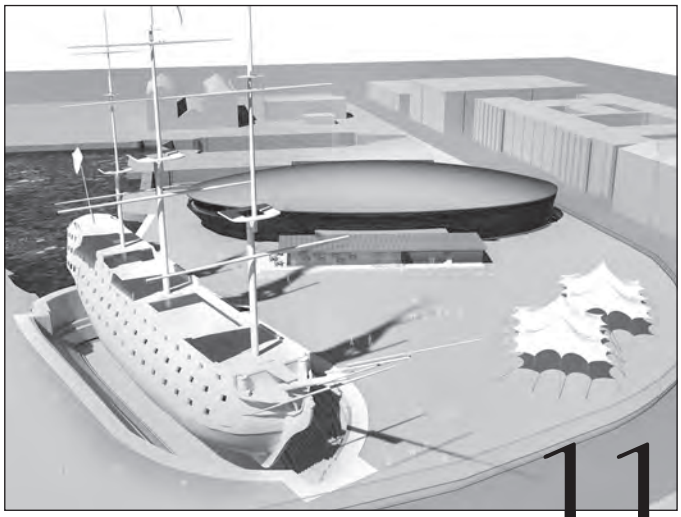
Above: The conceptual plans for the *Mary Rose* museum feature a central walkway which will allow visitors to compare the surviving part of the ship on the one side with a stylized re-creation on the other, which will contain many of the salvaged and restored artefacts.

Courtesy the Mary Rose *Trust*

Below Left & Right: Also envisioned on the museum site are facilities for corporate entertainment and a hands-on educational centre, furthering Carr's initial intent to share with future generations the understanding and appreciation for an era of sail, exploration and discovery, long past but now preserved.

Courtesy the Mary Rose *Trust*







After 127 years and many uses, *Great Britain* **was returned to her original purpose-built drydock in Bristol, where her restoration got underway in 1970.**
Photograph by Lord Greenway

SS *Great Britain*

The steamship *Great Britain* was the brainchild of celebrated Victorian railway engineer Isambard Kingdom Brunel. Built in a purpose-built drydock in Bristol, she was completed in 1843 and was the first ocean-going ship to employ screw propulsion as opposed to paddles and the first to be constructed of wrought iron.

Originally designed for transatlantic service, she survived a stranding in Ireland in 1846, but after a further five years was still failing to attract many passengers. In 1852, she was switched to the Australian emigrant run on which she operated successfully, with the addition of an extra deck, until 1876. She took part in the Crimean War as a Government transport and then traded as a windjammer before becoming a coal hulk in Port Stanley, remaining as such until she was intentionally holed and beached in 1937.

Efforts to preserve such an historic ship finally came to fruition in 1970 when she was floated onto a pontoon and towed back to the UK, making a triumphal return up the river Avon to Bristol with Prince Philip aboard. She was later eased back into her original building dock, since then the restoration process has been more or less continuous. Phase One involved putting her back into her original condition, however, as worked progressed,

Right & Below: In order to abate her corrosion, the underwater portion of *Great Britain's* hull is encased in a humidity-controlled environment. She is surrounded by a glass sea, giving her the lasting impression of floating on water.

Photographs by Lord Greenway

it became evident that the elements were causing her iron hull plates to corrode. To combat this, her director Matthew Tanner came up with an ingenious plan which consisted of creating a glass "sea" at waterline level supported by steel beams, thereby enabling the underwater portion of the hull to be preserved in its present state (holes and all) in a humidity-controlled environment to prevent further deterioration. At the same time a few inches of water pumped from the adjoining dock are circulated slowly across the glass panels, creating the illusion that the vessel is floating. This phase, costing some £11 million, was completed in July 2005.

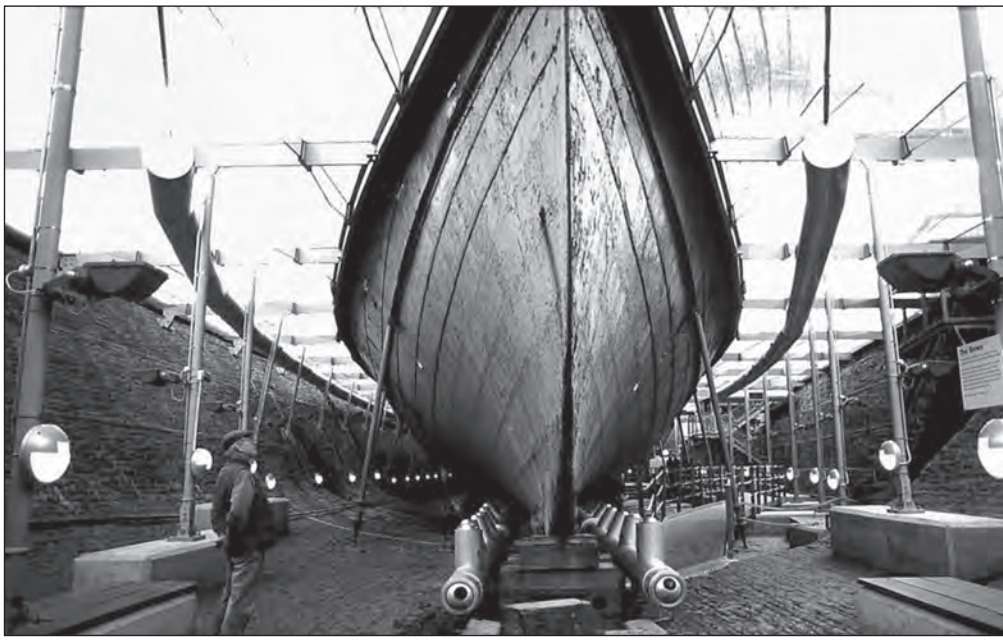
Great Britain has won many awards, most recently the prestigious Gulbenkian Prize worth £100,000 in 2006, and the Best Large Visitor Attraction in 2007, along with Europe's Michelotti Prize for the Best Industrial and Technology Museum.

Work on the second and larger phase of the project, estimated to cost a further £30 million, is now getting under way. This will involve the restoration of the surrounding historic Victorian Dockyard, which was heavily damaged by World War II bombing, and the establishment of the Brunel Institute comprising a library and archive, including the David MacGregor collection of plans, as well as a learning centre. Thanks to a gift of adjoining land by the City of Bristol, the work is expected to be largely funded by an on-site property development comprising 145 one- or two-bedroom apartments.

Right: Onlookers admire *Great Britain* as she appears to be floating at dockside.

Photograph by Lord Greenway









Left: Current plans are underway for the *Cutty Sark* to be raised off the floor of the dock at Greenwich, while supporting her with steel girders.
Courtesy the Cutty Sark *Trust*

Cutty Sark

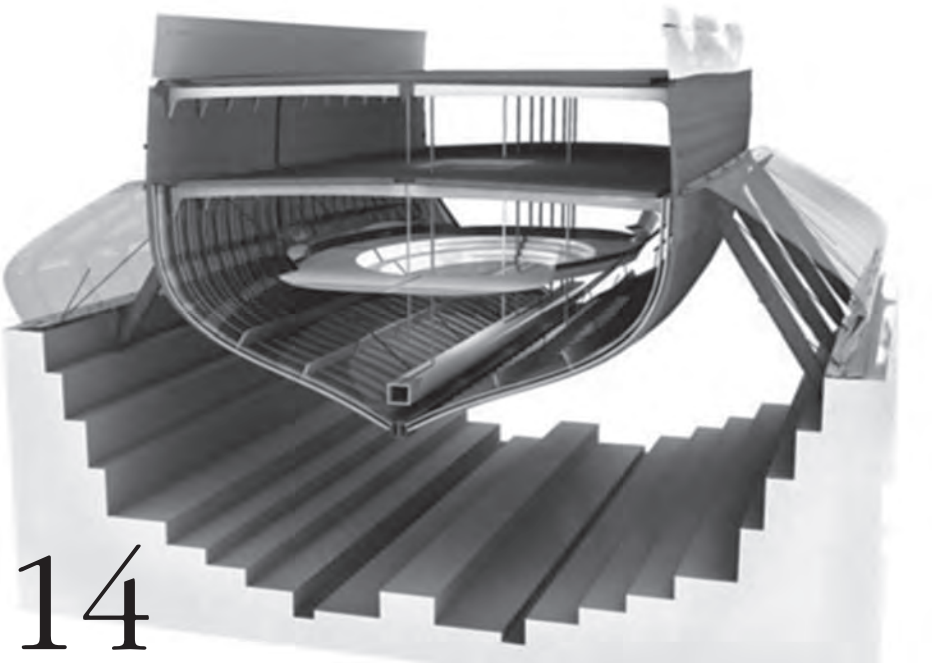
Built a quarter of a century after *Great Britain*, the *Cutty Sark* is the last surviving tea clipper. Following the opening of the Suez Canal, she could not compete with the new steamers and was transferred to the Australian wool trade where under the expert guidance of her celebrated master Captain Woodget, she made many fast passages. In 1895, she was sold to Portuguese owners and renamed *Ferreira,* but in 1922 (by then a barquentine), she was seen by former windjammer captain Wilfred Dowman when she put into Falmouth with gale damage. He was determined to buy her and restore her, and in 1923 she was again named *Cutty Sark*. After restoration to her original state, she was opened to the public and also served as a cadet training ship, but after Dorman's death was sold to the Thames Nautical Training College and towed to Greenhithe on the lower reaches of the River Thames. In the 1950s, Frank Carr and Prince Philip were instrumental in setting up the *Cutty Sark* Trust to save her and in December 1954, she was eased into a specially created dock at Greenwich. After three years restoration she was officially opened to the public by HM The Queen.

In spring 2007, a major restoration project was initiated to maintain the integrity of her hull, which was beginning to show signs of serious deterioration. The plan involves raising the ship off the floor of the dock and supporting her with steel girders on either beam, which will not only guarantee the integrity of her hull, but will also allow corporate functions to be held underneath her as a means of raising funds.

Her masts, rigging, bowsprit, famous figurehead, and deckhouses were removed for storage in the Chatham Historic Dockyard and a false roof built over the hull. However, nemesis struck in the early hours of 21 May, when reports started to come in of a serious fire aboard. Firemen strived for several hours to get the blaze under control, but many feared the worst.

Happily, the damage turned out to be less than at first expected and only some two percent of the original material was lost. Much of the blaze had involved the temporary roofing, but nevertheless the 'tween deck had been destroyed and some of the remaining hull timbers, 280 of the 490 having already been removed, had suffered charring, but their thickness and the fact that they were so tightly aligned prevented worse damage. In addition, some of the ironwork was buckled, but not beyond repair.

The fire brought all work on the hull to a halt whilst investigators sifted through the ashes for its cause (still unknown), however restoration work on the masts and



Left: This three dimensional rendering conceptualizes the approach to maintaining the integrity of the *Cutty Sark's* hull.
Courtesy the Cutty Sark *Trust*

spars continued off site. Additional costs connected with the fire and the construction of a new protective roof required an outlay of about £2.5 million from the reserves of the *Cutty Sark* Trust. The restoration work was fully insured, but on a cumulative basis, and the work was still in an early stage. At the present moment there is a pressing need to raise the sum of about £1.5 million by January 2008 in order to enable work to continue.



In conclusion, the preservation of historic ships, whether they be large or small, is an ongoing business as well as an extremely expensive one. It is fervently hoped that the work in progress on these three unique vessels will enable future generations to both enjoy and learn from them for many years to come. Frank Carr would indeed have been proud.

Above: News of fire aboard the *Cutty Sark* went 'round the world, many feared the worst. In the end, about two percent of her original material was lost.

Courtesy the Cutty Sark *Trust*

Note: *Coincidental with the Heritage Lottery Fund award to the* Mary Rose *came a grant of £10 million to the* Cutty Sark *Trust toward the additional costs arising from the fire. This will allow restoration work to start again, but still leaves the Trust to find another £5 million to match an earlier £11.75 million grant from the HLF and so reach the original target. The timescale of the project has slipped a little, but the ship should be reopened to the public by late 2009 or early 2010.*

Below: The *Cutty Sark* should be reopened to the public by late 2009 or early 2010.

Courtesy the Cutty Sark *Trust*



The Ship At The End Of The Street:

What the Historic Ship Can Do For Us in Her Voyage through Time

By Peter Stanford



Peter Stanford, President Emeritus, National Maritime Historical Society, has been "messing about in boats" since before he can remember. After serving in the US Navy in World War II, he attended Harvard College, where he received a BA with honors in history and literature. He then sailed across the Atlantic to attend King's College, Cambridge, where he received an MA with honors. He subsequently worked for one year in a London bookshop while pursuing naval research at the National Maritime Museum.

Stanford sailed home as mate on the English yawl *Bloodhound*, which went on to win second place in the Bermuda Race of 1952. Back in New York, Stanford worked in book publishing, then market research and advertising in the 1950s and 1960s. In 1967, he quit the business to become the first president of the newly formed South Street Seaport Museum. The museum was founded at his initiative with his wife, Norma, who shares his interest in history and seafaring.

In 1976, he resigned from South Street to go to work for the National Maritime Historical Society. Stanford continued as president of NMHS for thirty-one years (1970-2001), establishing the magazine *Sea History*, and playing a role in saving historic ships and launching programs in maritime education. Stanford has authored several museum books and many magazine articles, and has received numerous awards for his work.

He currently serves as Vice President of the World Ship Trust headquartered in London, and as secretary of the American Ship Trust Committee alongside Ray Ashley, who serves as chairman. Stanford is active in several other maritime organizations as well. He and his wife continue to enjoy sailing and traveling, particularly to England and Italy.

The ship is the iconic symbol of all our work in maritime history. And a powerful, expressive symbol it is. Fortunately for us, her image is one that breaks through to people of all ages, throughout the ages. The oldest preserved historic ship we have was built for an Egyptian pharaoh who clearly saw that this was the conveyance to carry him to the afterlife, some four and a half millennia ago. And 1600 years later we find one of Israel's great kings, Solomon, pausing in a memorable moment to wonder at "the way of a ship in the sea." We have not lost that wonder today. After her visit to the ships of South Street in New York, Grace Pallachino, a schoolchild, wrote a note saying everyone should come to see these vessels. Why? She put it simply: "to be amazed about New York."

But it is not easy, or an automatic process, to develop the enormous marketing opportunities that exist in a ship. These opportunities lie at a deeper level than most of our daily business, which is both their strength and their difficulty; they are practically inbred in the human psyche, in the deep yearnings, dreams and aspirations that people invest in the shape of a ship and the idea of making a voyage to new lands—even to a new world.

Out of our work with historic ships in the National Maritime Historical

Below: The ships that caught a young man's fancy in South Street in the late 1800s vanished in the early 1900s, as the Street of Ships faded in memory. But deep currents of interest led some people to join the historic ships movement of the 1920s, in New York in the 1960s.

Courtesy the National Maritime Historical Society



Opposite Left: The iconic appeal of the ship at the end of the street gleams in these ships in New York circa 1800—the ships that connected the city to the world. The waterfront street in fact led right around the world, bringing America its wealth and its people.

Painting titled Maiden Lane, N.Y., ca 1800, *by John Stobart*



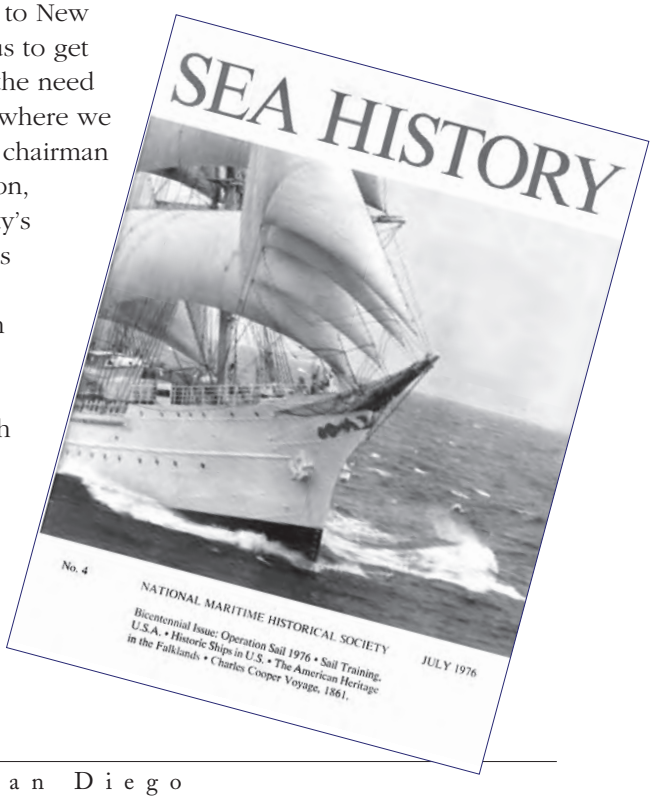
President Johnson confirmed the national mission of NMHS in 1964, accepting the *Kaiulani* on behalf of the American people, a gift of Philippine President Macapagal. But through lack of public interest the ship, except for a few surviving fragments, was lost.

Courtesy the National Maritime Historical Society

Society, we have come to believe that what is needed for a ship to succeed in her voyage through time is to be handled in ways that express the "emanations of history, lore, humanity" inherent in a ship—a goal set by the great ship rescuer Karl Kortum half a century ago. Put more bluntly, when a ship is treated as a productive asset and given priority in her keeper's affairs, she will flourish in her own right. And in time, we find a ship steered aright will pull more than her own weight—she can pull other projects along behind her.

The unrestored *Wavertree* arriving in New York in 1970, flourished even as a bare hulk because people knew what she was—volunteers loved to tell her story to all comers. And they were well armed to do so, for her keepers, the South Street Seaport Museum, had published a book about the ship based on a young man's actual experiences aboard, to which Alan Villiers, master mariner and master storyteller of the Cape Horn road in the last days of deepwater sail, contributed a rousing come-all-ye preface.

The effort to bring the ship to New York gave us impetus and focus to get banks and city officials to see the need to save the historic waterfront where we docked the ship. John Zucotti, chairman of the City Planning Commission, held the first meeting of the city's waterfront planning committees in the ship's raw 'tweendecks. No one there had been in such a stark setting, but there were photographs everywhere to illustrate life aboard, along with weathered artifacts largely secured for us by Karl Kortum, who from his native San Francisco could see the importance of having a great sailing ship in New York. People got the message. Chairman Zucotti concluded



Right: USCG *Eagle* led OpSail-76, the tall ship gathering that excited the nation and provided the first national funding for ship preservation. Public interest also saved *Eagle* from the budgeteers' axe—she had become too powerful an American icon to lose.

Courtesy the National Maritime Historical Society



Frank Carr (second from right) proposed the World Ship Trust to save historic ships, meeting in New York at Kaiulani's wheel, in 1974. As others posed at the wheel, the author crouched in front with Mel Barisic of NMU (right), speaking for today's seamen.

Courtesy the National Maritime Historical Society

his talk by saying that attendees should gain inspiration from the sheltering hull around them, shaped to challenge the harsh interface between sea and sky and so connect up the peoples of the world.

The Seaport Museum had other pressing priorities and the restoration of the ship lagged. The National Maritime Historical Society, which had been headquartered with the museum and later moved out, was invited to return and, in 1980-1984, ran a restoration program aboard, which at last replaced the sandbins the ship had carried with a deck with hatches, deckhouse, and other gear. A skilled volunteer workforce was enlisted and funds were raised for needed shipyard work. In a remarkable example of the effect of human desire on economics, the forecastle deckhouse, quoted by the yard at $110,000, was built for $27,000 by volunteers led by the museum's founding chairman, Jakob Isbrandtsen.

With a change in museum management this outside effort was canceled. It alone was not enough to restore the ship and unfortunately did not lead to hiring of permanent staff—it awaited a generous benefactor's gift fifteen years later, to have the ship at last rigged and exercised under sail. But the earlier effort had laid the groundwork for greater things. The *New York Times* saluted it in a story headlined "A Restoration of Spirit," one of a surge of press stories which benefited the museum's work. People ranging from Buckminster Fuller to Prince Philip, who visited the ship, praised the work in ringing words that pointed out the debt the city owed the sailing of such ships.

Here indeed was an example of a ship doing things for the museum, incomplete as she remained, things you could never find a public relations outfit or ad agency able to do, in a wave of good feeling that seemed to carry everything before it. Alas, other priorities prevailed and there was no immediate follow-up to this encouraging beginning. For months afterward, I got calls from donors asking why no one had asked them to renew their pledges—the focus was simply elsewhere.

How NMHS found itself in a position to mount this creative intervention carries us back to our founding purpose. The Society was established in 1963 to save the Maine-built barque *Kaiulani* of 1899, and in 1964 President Johnson accepted the vessel as a gift of the Philippine people to the American people—a unique case of a ship held in trust for the American people as a whole. We did not succeed in saving *Kaiulani,* but we did set to work to generate a tide of public interest to float historic ships. In 1972, we began publishing the journal *Sea History*, which carried Norman Brouwer's historic ship lists, culminating in The *International Register of Historic Ships*, published by the World Ship Trust. We also sponsored a US tour by Frank Carr in 1974, advocating the establishment of the World Ship Trust to save historic ships, which led to the founding of the WST in 1979.



Efforts to save the paddlewheel *White Swan* of the Hudson did not work despite promised governmental aid. And "because we do not have another *Alexander Hamilton* to lose," the NMHS Ship Trust Committee was formed to save historic ships in 1979.

Courtesy the National Maritime Historical Society

Meantime we worked with our trustee Frank Braynard to mount Operation Sail 1976. This noble venture did wonders for the spirits of a troubled nation, and generated a wave of public interest in traditional sail. And it actually made money. Funds were given to the National Trust for Historic Preservation to form a Maritime Division, which made the Trust's first grants to historic ships. On its own, NMHS mounted a successful effort to save the Cape Verdean schooner *Ernestina*. Other, unsuccessful efforts spurred us to form a Ship Trust Committee to help save historic ships—including the support of sail training, skills transfer, boatbuilding, marine archaeology and all the disciplines of seafaring. With the support of Senator Kennedy, we got a bill through Congress which appropriated $5 million for these broad-band purposes in 1979. This grant generated twice its weight in matching funds, saving a number of important ships, from the barque *Elissa* in Galveston, to the Liberty ship *Jeremiah O'Brien* in San Francisco. This bill was not renewed due to differences in the maritime preservation community—no one is anxious to donate funds where people are at odds on how to proceed.

Now, after nearly thirty years of intermittent efforts to get a central drive going to do something nationally for the historic ships that are the birthright of every American, NMHS has set up a reconstituted Ship Trust Committee, the original group, inspired by Karl Kortum and led by me, having pretty much left the scene. Taking their place are Ray Ashley, President of the Maritime Museum of San Diego as chair, with NMHS Chair Ron Oswald, Mystic Seaport's Dana Hewson, and Walter Rybka of the brig *Niagara* Museum in Erie, PA, and myself as secretary pro tem.

What lies ahead? The Committee met during the 8th Maritime Heritage Conference in San Diego, and early resolved to mount a drive for United Nations Recognition of historic ships recognized by the WST as a World Heritage Site, a project on which Ray Ashley had met with the World Ship Trust's Lord Greenway in London, to secure agreement before the Conference, which Lord Greenway attended and played an active part in.

A second project took shape as a booklet featuring John Stobart's paintings of "The Ships of South Street," to bring fresh life and interest to the *Wavertree,* supporting South Street Seaport Museum's new drive to restore the ship to sailing condition, engage her in active public programs, and provide for her



The Committee secured $5 million in Federal funding in 1979, saving such ships as the Liberty ship *Jeremiah O'Brien* **in San Francisco, and the 1877 barque** *Elissa* **(above) in Galveston, both of which are actively campaigned today. This funding was not renewed, however.**

Courtesy the National Maritime Historical Society

future maintenance and operations with a strong supporting community. There were two main ideas behind this. Firstly, to help assure that New York, epicenter of national communications, would have an active ship to deliver the message of the tall ships, leaning on the wind, which built a city from the sea. Secondly, to provide the support of NMHS, representing the national interest, in a form that was not imposed on the museum or injected from outside like a booster shot, but supportive in a way to give potential supporters an independent, fresh perspective on the great task the Seaport Museum has taken on.

The big gamble, in which I confess we delight—and ask others to join—is to render support in a marriage of art and historic preservation, going straight for the goal of enlisting fundamental human sympathies in a project demanding the best that people have to give, with the reward of being part of a beautiful and needful thing well done.

A plan and long-range strategy to move maritime history and historic preservation into the mainstream of American concerns will be developed by the committee using the counsel and support of all who are willing to work and play a part in this movement.

Historic ships play the central role because their outreach message can affect the fortunes of museums and study centers far from deep or shallow waters.

And we have an evolving philosophy about the course ahead for historic ships, which was well expressed by Ray Ashley in a paper he wrote for "The Once and Future Seaport," published by NMHS in March 2007, as part of a conference on the future of South Street Seaport in New York. He said we might stop worrying so much about saving ships: ***What if the ships are here, as they have always been, to save us?***

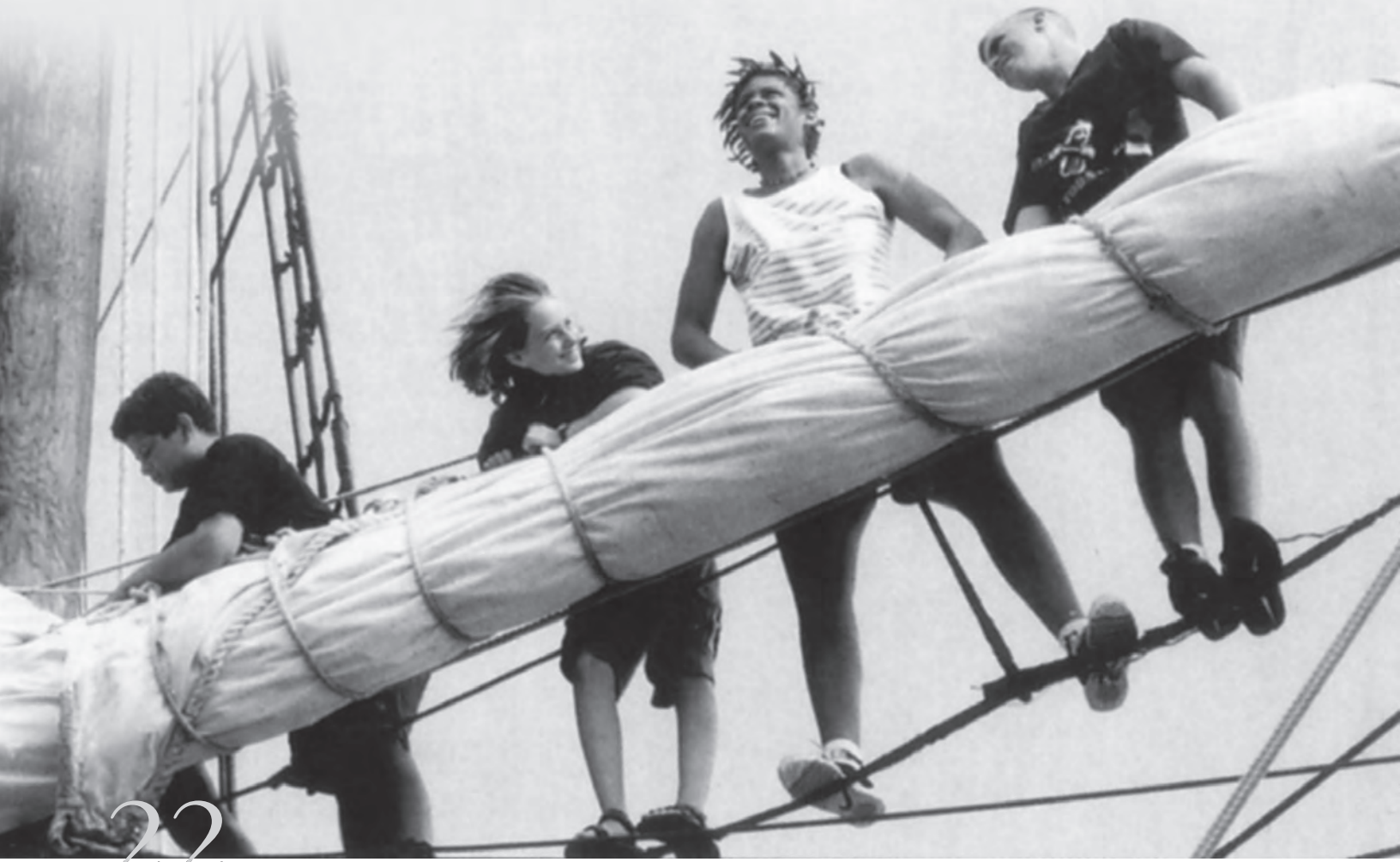
Put them to work, he went on to say. ***Give them the dignity of purpose, and they will be able to do what they have always done, to challenge us with difficult service.*** Ray also said that our ships must be exercised at sea when possible. Set sails at dockside and more people will board your ship, and learn more from her. And she will begin to move into the mainstream of human concerns, even in an overly busy, noisy society, teaching as she goes the deep lessons of seafaring, with real joy in the learning.

In their ideal form, he concludes, ***ships were meant to harbor life and human society even in the darkest and most threatening of places. When that nature is evoked, powerful results can ensue, and they manifest themselves in strange and wonderful ways.***

One could hardly ask for a better goal to steer for than evoking that nature – the essential nature of a ship.

The Ship Trust is working to encourage activities that strike a chord with young and old on the fundamentals of the seafaring experience, and on the ships that carried the message of seafaring in opening the ocean world to human interchange and cooperation.

Photo by Karl Kortum, Courtesy the National Maritime Historical Society





The future includes action to support the South Street Seaport Museum effort to restore the Cape Horn square-rigger *Wavertree*, through a new book of John Stobart's paintings presenting the ship as a lone survivor of the ships that built a city from the sea.

Painting of Wavetree *by John Stobart*

A Marriage of Art and History

When the reconstituted American Ship Trust met on 12 October 2007, in the course of the 8th Maritime Heritage Conference in San Diego, the ground rules set by Ray Ashley as the new chair were readily agreed upon: ***We're here to advocate and advance the cause of historic ships, which is vital to the cause of history in general. The ship is the icon of history that spans oceans and the seas of time, and more than icon, she is, at her best, an embodiment of active experiential learning. Our mission is to engage more people with that vital heritage of all Americans.***

Surveying the scene in America today, the committee resolved that the situation of the historic ships of South Street Seaport Museum in New York, most needed a new breeze of public support and participation in their sails, and that the National Maritime Historical Society, the committee's parent body, was ideally placed to raise that offshore wind. John Stobart's offer of the use of his paintings, depicting the ships of South Street in the stream of time, opened the way to reaching potential supporters with a message celebrating these ships that built a city from the sea, centering on their noble survivor, the Cape Horn sailing ship *Wavertree*.

The choice of New York's South Street as the place to launch this effort in encouraging a fresh take on historic ships had much to do with the city's role as national media center, with the fact that the 2001 attacks on the nearby World Trade Center towers had badly hurt attendance and contributions at the Seaport Museum, and, lastly, that the Seaport Museum chair and museum director, backed by a united board, had resolved on a rededication to founding purposes in the Seaport Museum.

Here, we felt, was an opportunity for a marriage of art and history that might have lively results, possibly with far-reaching effects. Certainly the beginnings have moved all of us involved in the program.

"*Wavertree,* once a great Cape Horner and the pride of the South Street Seaport Museum's historic fleet, is again underway," said Museum Director Mary Pelzer this spring, "… and the National Maritime Historical Society serves as an essential envoy in *Wavertree's* restoration outreach."

"Our modest venture in publishing *John Stobart and the Ships of South Street* will not solve giant problems and produce an immediate flow of funds," as National Society chair Ron Oswald has pointed out. "But the good feeling generated in our work with the Seaport Museum augurs a hopeful and productive future for this kind of effort."

Peter Stanford, Secretary
American Ship Trust Committee, NMHS

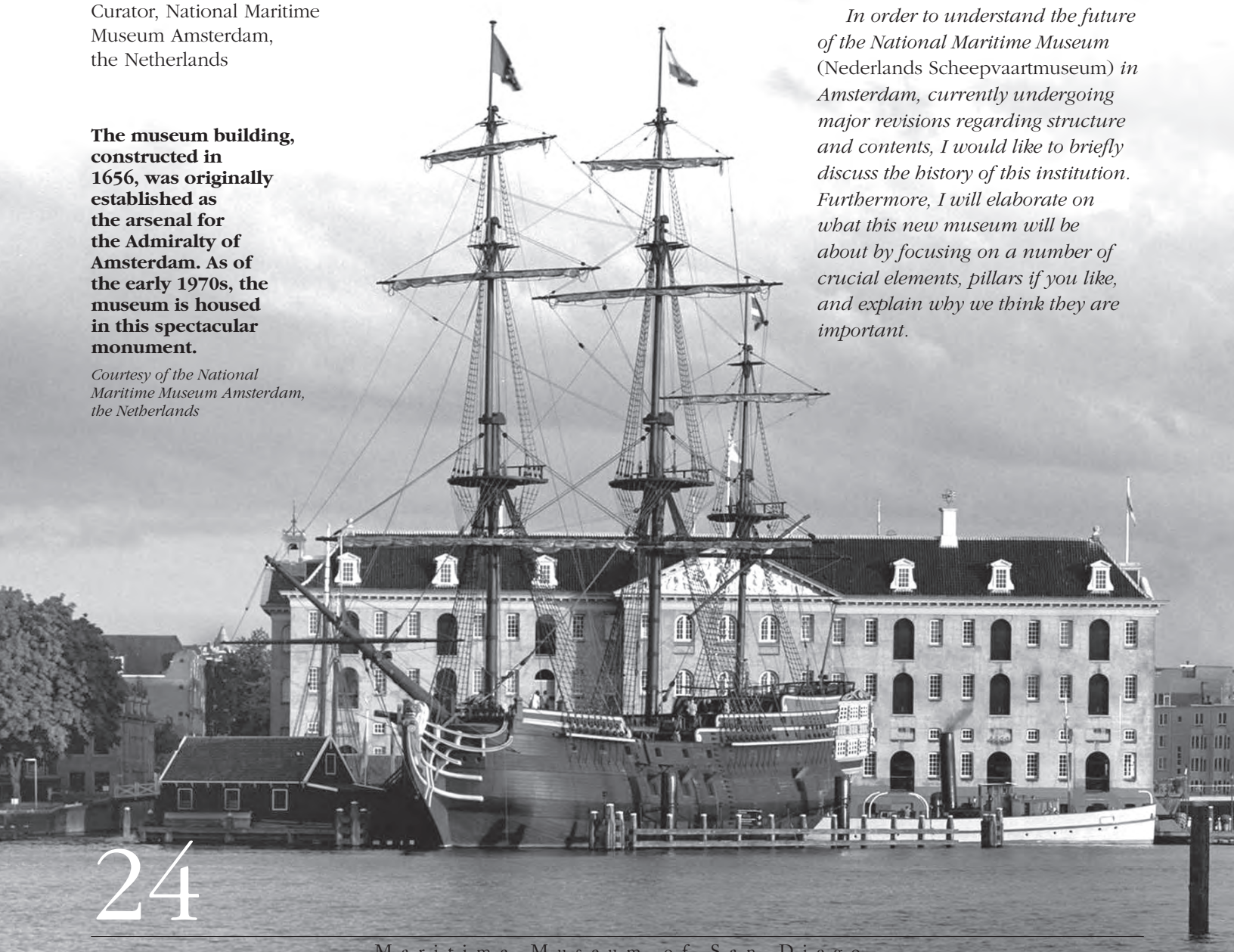
A New Wave:

The National Maritime Museum Amsterdam And Its Course After 2010

By Joost C.A. Schokkenbroek, Ph.D.
Curator, National Maritime Museum Amsterdam, the Netherlands

Introduction

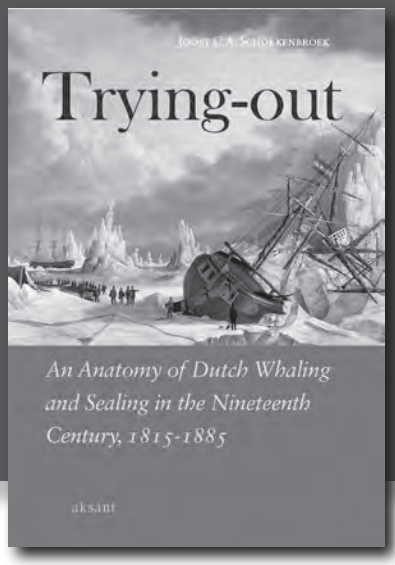
In order to understand the future of the National Maritime Museum (Nederlands Scheepvaartmuseum) *in Amsterdam, currently undergoing major revisions regarding structure and contents, I would like to briefly discuss the history of this institution. Furthermore, I will elaborate on what this new museum will be about by focusing on a number of crucial elements, pillars if you like, and explain why we think they are important.*



The museum building, constructed in 1656, was originally established as the arsenal for the Admiralty of Amsterdam. As of the early 1970s, the museum is housed in this spectacular monument.

Courtesy of the National Maritime Museum Amsterdam, the Netherlands

Joost C. A. Schokkenbroek holds a History degree from Leiden University, the Netherlands. After his graduation (with a specialization in Maritime History), he worked for the Ministry of Foreign Affairs, and at the Kendall Whaling Museum in Sharon, Massachusetts (1988-1991). In 1991, here turned to the Netherlands to start his work as Curator of the Netherlands Maritime Museum in Amsterdam. Over time he has served as Advisory Curator to the Kendall Whaling Museum and (as of 2001) the New Bedford Whaling Museum. As of 2008, he acts as President of the Dutch Association of Maritime History. Schokkenbroek successfully defended his Ph.D. thesis at Leiden University in 2008. His thesis is titled: *Trying-out. An Anatomy of Dutch Whaling and Sealing in the Nineteenth Century, 1815-1885,* **Aksant Publishers. Amsterdam, 2008. www.aksant.nl**



This whole process of restructuring the museum's physical presence and of resetting its course is what I refer to as the New Wave. There are no waves without ***C's****. These* ***C's*** *are:* **C***onstruction,* **C***ontents, and* **C***reative collection management.*

History

The National Maritime Museum in Amsterdam was founded in 1922. As early as 1913 Queen Wilhelmina had met with a number of Amsterdam harbour barons to discuss the possibility of opening a national maritime museum. Three years later, in 1916, the shipowners and captains of maritime industries stood at the cradle of the Association Netherlands Historic Maritime Museum (*Vereeniging Nederlandsch Historisch Scheepvaart Museum*). All they needed was a suitable building to house the thousands of artefacts gathered through the benevolence of private collectors. They ordered the construction of three houses in the centre of town. Later, the Board members of the Association decided to combine these three buildings into one.

In 1922, the museum opened its doors to visitors. That is to say, opened its doors on a limited number of weekdays to people who had made appointments ahead of time. A handful of volunteers controlled the day-to-day business. In later years, especially during the 1950s and 1960s, an increasing sense of professionalism ruled the waves. Directors were appointed by the Executive Council of the Association, and money was found to hire a small number of professionals to describe the collections and allow admittance to a larger number of visitors.





To the left of the mid-seventeenth-century building a replica of the eighteenth-century Dutch East Indiaman, *Amsterdam*, is moored. Here role players interpret tasks formerly performed by crewmembers, and educate audiences about life at sea.

Courtesy of the National Maritime Museum Amsterdam, the Netherlands

More and more people were attracted by the beauty of the objects and by the way they were displayed. The relatively small building in the centre of town had its limitations as to the crowd it could handle. In the early 1970s, the museum collections (at present approximately 230,000 artefacts) and administration were transferred to a large seventeenth-century building on the outer rim of the old centre. This building, designed by the city's architect, Daniel Stalpaert, and constructed in 1656 after the First Anglo-Dutch War (1652-1654) as an arsenal for the Admiralty of Amsterdam, overlooks part of the harbour of Amsterdam and therefore turned out to be a spectacularly suitable place for visitors. For many decades the building was the largest seventeenth-century building in Amsterdam. However, the Arsenal (*Zeemagazijn* in Dutch) was never meant to become a museum. The thick walls insolate both heat and cold, consequently prolonging summers and winters, much to the dismay of the curatorial staff.



In 1975 the Association (by now a collective of friends of the museum) negotiated with the national government to have the museum become a national museum. Through the Ministry of Culture Dutch taxpayers would pay for the museum employees' salaries, while the collections were given on loan to the Ministry, thereby remaining in possession of the Association. The museum opened its doors in 1981.

Right: Via this rather small entrance the visitor is about to enter the adventurous world of Dutch maritime history.

Courtesy of the National Maritime Museum Amsterdam, the Netherlands

This situation lasted for two decades. On 1 January 1995, the museum together with a large number of national museums, was privatized – or at least de-nationalized. With regard to the responsibility for and upkeep of the collections hardly anything changed. The national government guaranteed a solid future for the artefacts by providing money for conservation, restoration and the like. However, from January 1995 onward employees were no longer employed by the Ministry of Culture, but by a Foundation. More importantly, the four years subsidy granted by the government was gradually reduced. Meanwhile, visitation had grown impressively from 70,000 to 80,000 annually in the 1980s, to way over 200,000 in 2006.

As a result of this reduction in governmental subsidies (taxpayers' money), we are forced to (or have the freedom to) seek additional funds through fundraising campaigns. This extra money has been used for the hiring of expertise, for the maintenance of the ships and for dozens of other endeavours.



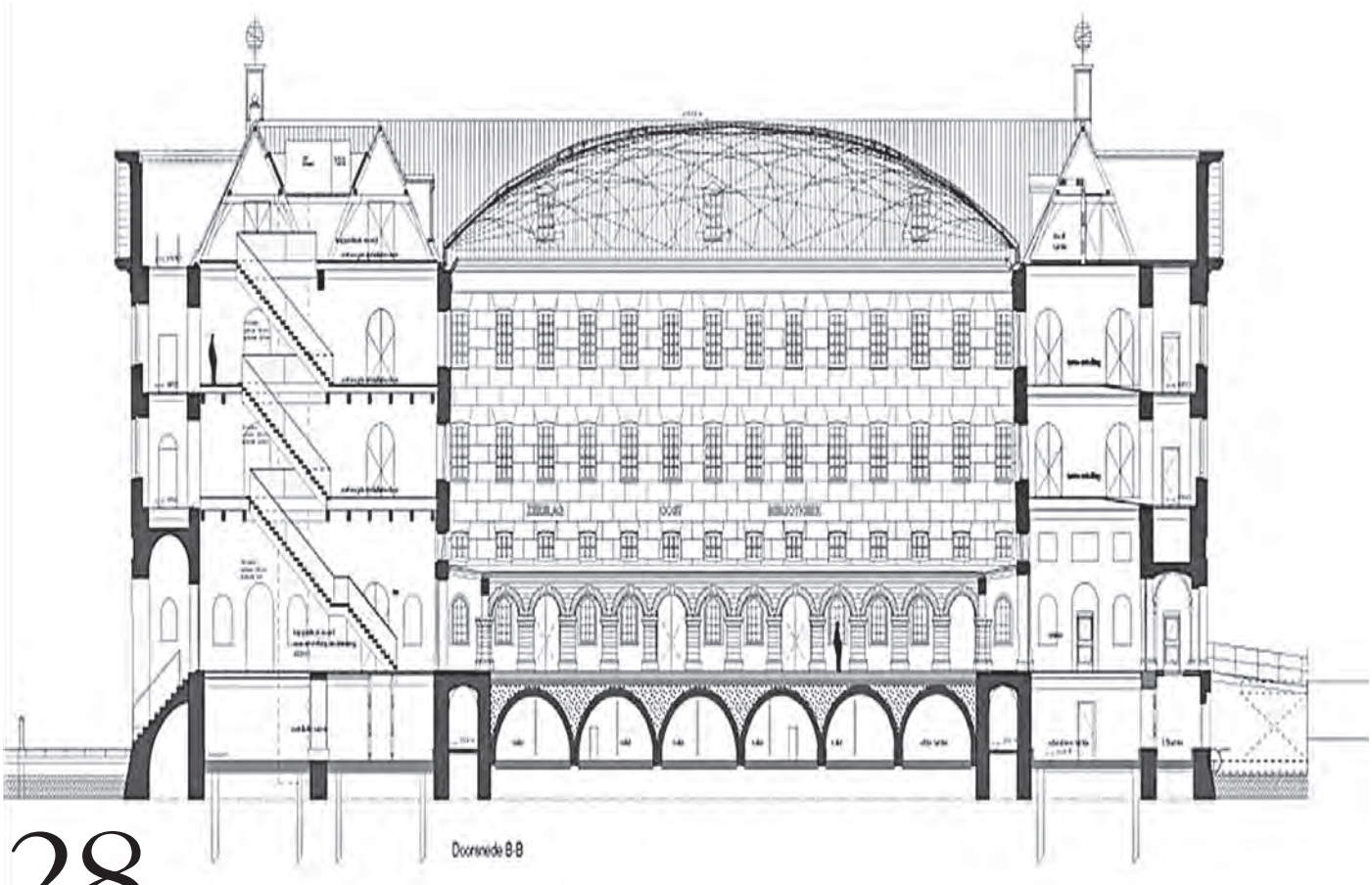
A New Wave

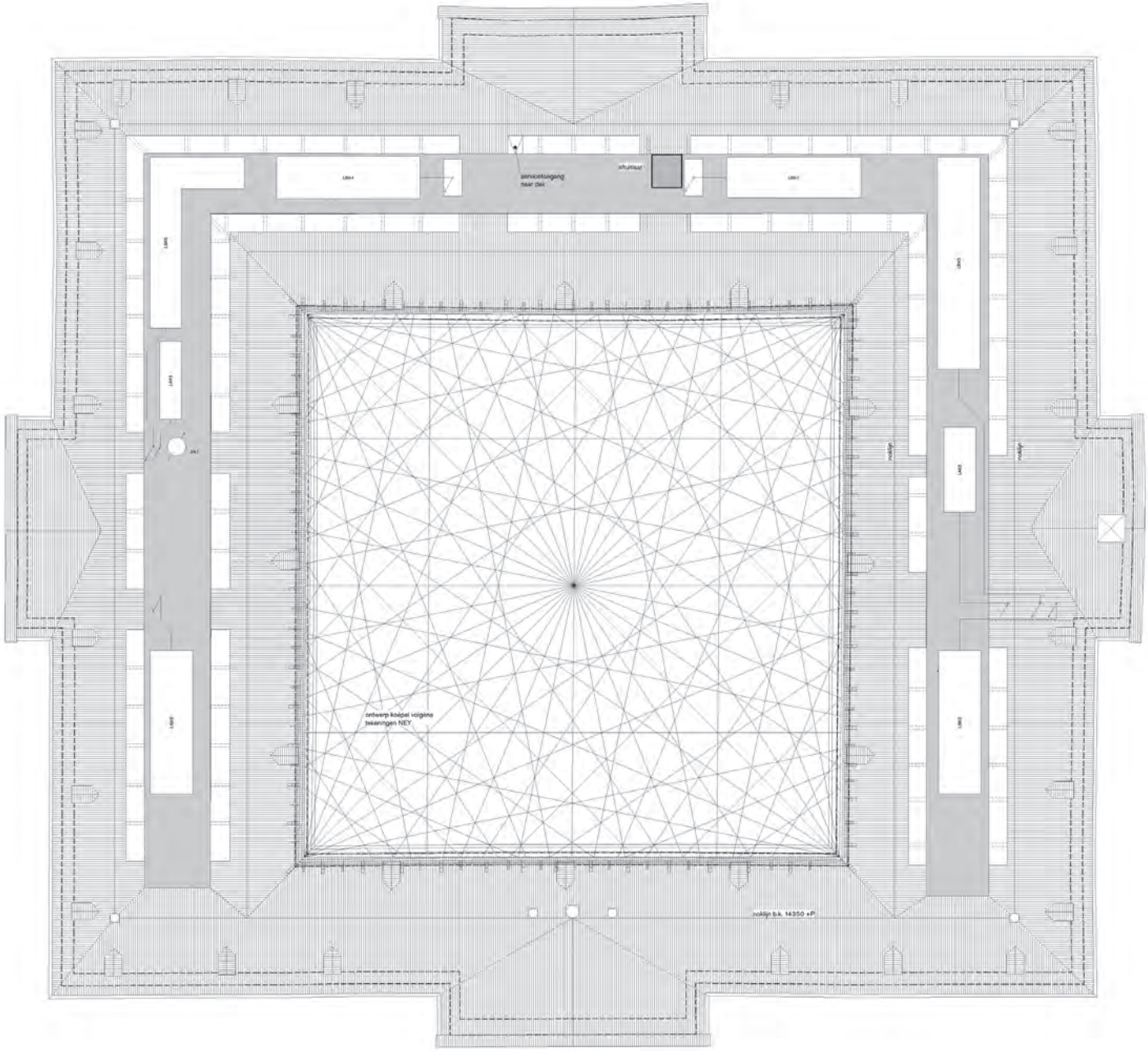
Meanwhile we have stated over and over again for the last fifteen years or so that our building should be adapted to its museum function. As of 2002 the national government has finally come up with the money for major renovation. The Minister of Culture found ways to reserve some €36 million (about $50 million). With this money, exclusively reserved for construction works on the building proper, a glass roof with dozens of compass lines together with 800 hundred light fixtures will be suspended about thirty meters above the 10,000 square-foot inner courtyard. Moreover, artificial inner walls will be torn down. The large space underneath the inner courtyard, where during the seventeenth and eighteenth centuries four water wells supplied the building and its inhabitants, will be utilized as wardrobe, educational centre, and the location for restrooms. In the new museum, as well as in the new organization, much more space will be reserved for parties, conferences, restaurant facilities, etc. In other words, space will be reserved for activities that generate high revenues.

Despite the sheer size of the national government's financial injection, the museum organization is still in need of additional funds. These funds, amounting to a total of €16 million (about $22 million), $10 million of which has been raised through a major capital campaign, will be utilized for interior projects like exhibits, upholstery, and a so-called introductory Maritime Experience. Recently, the museum has turned its attention to the American market in order to entice American museum and ship lovers to invest time, energy, and money in the National Maritime Museum in Amsterdam.

Below: This artist's impression provides insight into the actual layout of the building. Moreover, the glass roof, one of the most spectacular design features for the "New Museum," is clearly depicted.

Courtesy Dok Architects, Amsterdam





This artist's impression depicts the building from above, with its glass roof covering the Inner Court of about 40 x 40 metres.

Courtesy of Dok Architects, Amsterdam

Contents

Next to the physical construction on both the outside and inside of the monumental building, the collection managers (curators) and educators (the presentation department) are working over time to develop new exhibits, to be installed upon the museum's re-opening sometime in 2010. In former years the museum's permanent exhibit was linear and chronological from the mid-sixteenth century up to the 1980s. Temporary thematic exhibits customarily accompanied this permanent exhibit.

For the new museum things will change. The presentation of artefacts and stories is centred around three key-elements: three thematic exhibits, seven object-oriented exhibits, and a so-called Maritime Experience (*Maritieme Belevenis*). All exhibits will be based on items from our own collections.

The three major thematic exhibits are: *Port of Amsterdam* (obviously about the history and present-day of Amsterdam harbour), *Shipping and Trade in the Golden Age*, and *Whales and Whaling*. In all three exhibits we try to connect with the outside world. In the case of *Port of Amsterdam* we reach out for information

from harbour authorities, from companies located in the harbour districts, but also from local communities depending on the harbour. In the case of *Shipping and Trade in the Golden Age*, we convey the key message that the Golden Age could not have come about if it weren't for ships and shipping. Relating to the famous expression "God created the World, the Dutch created the Netherlands," we will focus on topics like land reclamation, by which process a disadvantage was turned into an advantage. Moreover, attention will be given to maritime-economic competition (in Europe and beyond – the New World and Asia) and its threats to the country's existence. Finally, the exhibit *Whales and Whaling* focuses on two elements: how did the perception of the whale evolve from the huge Monster of the Deep into the huggable Giant Pet? And how did this change affect the relationship between man and whale through the ages? Here we will use whaling as the continuum for our story.



Current view of Inner Court

For all three exhibits we had a professional bureau do research by interviewing our target groups. Perhaps not surprisingly, it turned out that most people insisted the museum refrain from installing an exhibit about whaling. Through the media, we will try to convey to the audiences that the whaleman's perspective on whales has changed over the years as well.

The seven object-oriented exhibits will provide windows for the presentation of specific groups of artefacts. Here, glass, silver and porcelain collections will be put on display. Other clusters of objects are: globes, marine paintings, models of yachts, ship decorations (carvings like figureheads, rudder heads, and taffrail decorations), navigational instruments, and photographs. Within one overall theme, each artefact will receive individual attention and will be installed to please more exclusive audiences – visitors who have familiarized themselves with the subject matter. In this way, we will be able to appeal to both broad and more specialized audiences.

Finally, we will install a so-called Maritime Experience. Here, the visitor will be guided through key events in the national maritime history of the Netherlands. Within a short period of time, the viewer will undergo an abbreviated course in order to grasp (part of) the information conveyed in any of the exhibits, and place this information within a broader general context.

Creative Collection Management

Here, collection management is not just related to the way artefacts are preserved for future generations, or how objects can be retrieved from shelves through solid and accurate administration. To me, collection management implies how museums present their collections in order to have their staff or people from outside use the artefacts to the fullest.

To this extent, the National Maritime Museum Amsterdam has developed what can be called a Policy for Academic Affairs, or as Glenn Gordinier phrased it at the time of the conference in San Diego, the concept of "Museum as University" (session 8: Maritime Education). Over the last fifteen years or so, curators have been asked to write and subsequently revise collection programmes and research programmes, in both cases programmes with a life expectancy of about five years. The research programmes are geared not only to the curator's own personal interest, or to his or her own field of expertise. The programmes relate to artefacts across all collections. Also, the proposals anticipate input from outside the museum.

For the new museum we have re-defined our ambitions, partly based on recent political developments, but also based on personal motivation to create a *Museum of Excellence*. In the Netherlands, as I am sure, in so many other countries, centres for higher learning (universities) are for the major part funded by the government. In return for these billions of euros the government has large numbers of committees of experts visit these universities to check the level of research



Opposite Left: This photograph of the Inner Court of the building of the National Maritime Museum in Amsterdam presents the current view.
Courtesy of the National Maritime Museum Amsterdam, the Netherlands

Above: This artist's impression splendidly illustrates the "spider web" of compass lines that form the basis for the glass roof above the museum's majestic Inner Court.
Courtesy Dok Architects, Amsterdam.

per department, the impact and quantity of the staff's output (articles, books, lectures, national/international co-operation through research projects) and so on. The former national museums in our country, seventeen in total, will be scrutinized in a similar fashion as of 2009. Therefore, it is of the utmost importance to think ahead. In October 2006, we managed to raise €100,000 to start a three-year Fellowships programme. This programme, effective as of January 2007, entails two Fellowships, one for students (with a stipend of €2,500) and one for post-doctorates (€30,000). At this time (October 2007), we are awaiting news about an application of about €150,000 annually. This money will be used for internship programmes, a professorship at one of the universities, a bi-yearly conference on international maritime historical and/or maritime museum topics. Also, in conjunction with our Yearbook series (started in 1991), we will develop a publication series, both based on our collections and on requests from outside the museum. Finally, over the last three years we have developed courses with the Universities of Leiden and Amsterdam through which we can entice young History students to use museum collections as a source for information, as tools with which to reconstruct parts of the past. In doing so, we hope to create a next generation of curators.

Conclusion

The National Maritime Museum is in the process of setting a new course. Large amounts of money are to be invested to improve the housing facilities both for artefacts and people (staff and an anticipated 300,000 visitors annually for the years after 2010). The former permanent exhibit, covering about twenty-five galleries, is to be replaced by three semi-permanent thematic exhibits and no fewer than eleven object-oriented exhibits. The third crucial element in the new museum will be the important expansion of Academic Affairs through the introduction of Fellowships, setting up of university courses and internships, and instalment of professorships; all focused on stimulating interest, provoking ideas for research, and on presenting the results of this research to wider audiences.

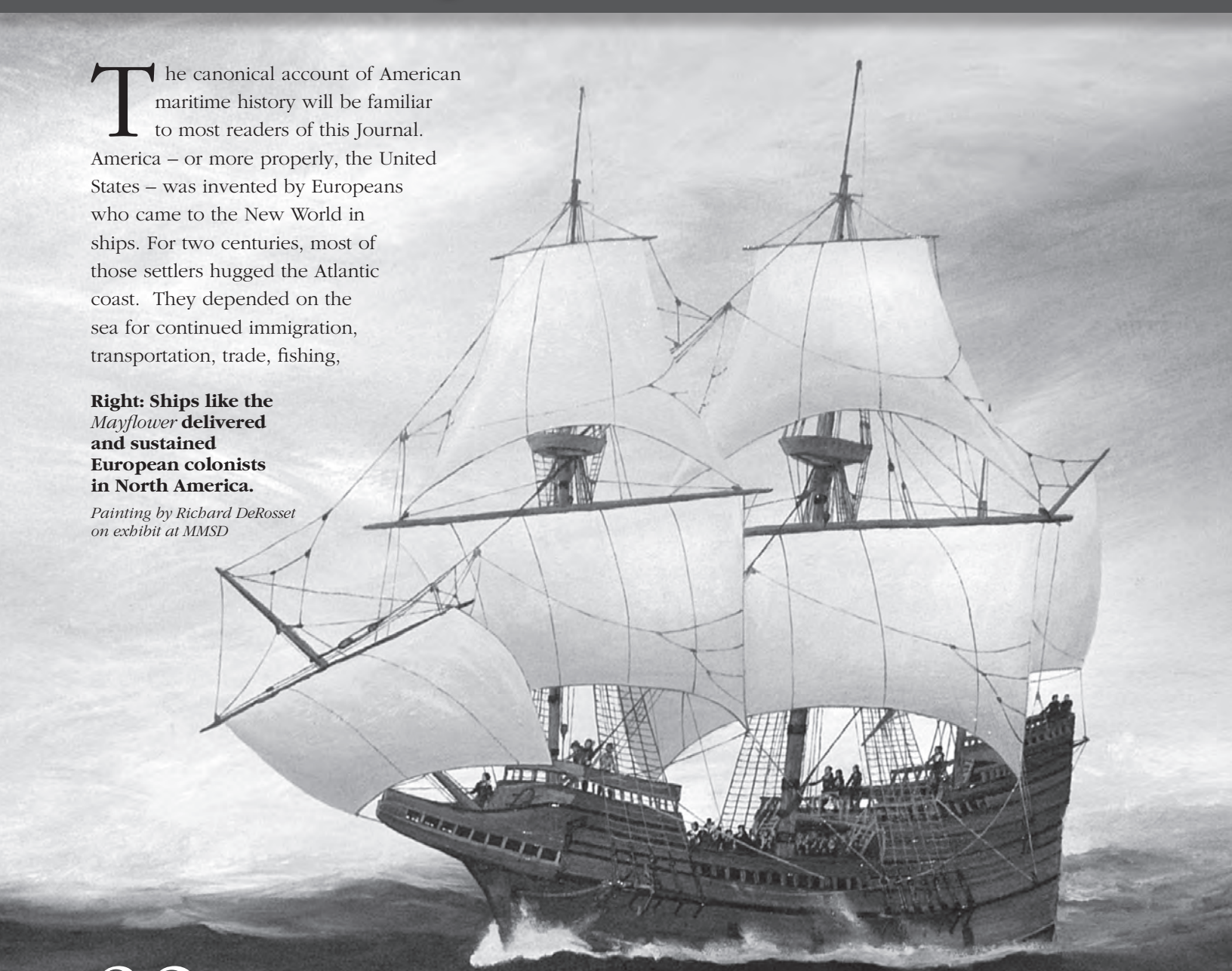
For more information email: jschokkenbroek@scheepvaartmuseum.nl or for additional information about the Fellowships see the bi-lingual website: www.scheepvaartmuseum.nl.

Reenvisioning American Maritime History

by Alex Roland, Ph.D.

Dr. Roland was a keynote speaker at the Maritime Heritage Conference Banquet.

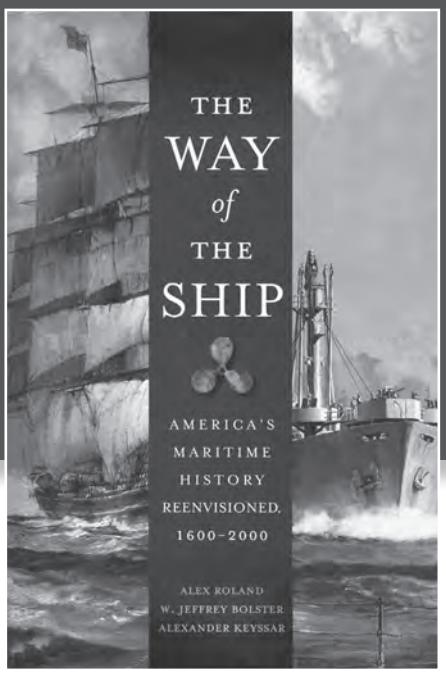
The canonical account of American maritime history will be familiar to most readers of this Journal. America – or more properly, the United States – was invented by Europeans who came to the New World in ships. For two centuries, most of those settlers hugged the Atlantic coast. They depended on the sea for continued immigration, transportation, trade, fishing,



Right: Ships like the *Mayflower* delivered and sustained European colonists in North America.

Painting by Richard DeRosset on exhibit at MMSD

Dr. Alex Roland, Professor of History at Duke University, is an accomplished author and leading historian of the history of technology. Dr. Roland studied as an undergraduate at the U.S. Naval Academy, taking a BS degree in engineering in 1966. After fours years in the Marine Corps, including a tour of duty in Vietnam, he entered the graduate history program at Duke University, specializing in military history. His dissertation was published as *Underwater Warfare in the Age of Sail,* **in 1978. From 1973 to 1981, he worked as historian with the National Aeronautics and Space Administration, returning to Duke in 1981 to teach military history and the history of technology. His latest book on American maritime history, written jointly with W. Jeffrey Bolster and Alexander Keyssar, is titled** *The Way of the Ship: America's Maritime History Reenvisioned, 1600-2000***, currently available at John Wiley & Sons, online at Amazon.com and your local bookstore.**



and the demand for forest products and shipbuilding, which in the late colonial period became the second largest export after tobacco. During the colonial period, oceanic maritime commerce flourished, the constraints of the Navigation Acts notwithstanding. Once liberated by the American Revolution, United States shipping spread its wings, sailing to new ports in Europe and Asia and prospering in both peace and war. America's golden age of oceanic shipping flourished under the sprawling canvas of the clipper ships in the 1840s and 1850s.

The turning point came in the Civil War. Confederate commerce raiding drove Northern ship operators to foreign flags, from which a vengeful and narrow-minded Congress barred their return after the war. Thus began a steady decline of America's ocean-going merchant fleet, punctuated over the ensuing century and a half by massive building programs in the world wars and recurring promises by Congress to sustain an American presence on the high seas. At the dawn of the twenty-first century, however, less than three percent of the waterborne commerce entering and leaving the United States rides on American ships. Indeed, shipping itself has receded from American consciousness, and the American merchant marine has shrunk to second rank on the world's oceans.

It is the purpose of this article to briefly suggest a different master narrative.[1] By looking at this familiar story from both global and domestic perspectives, it is possible to see American maritime experience as a tale of steady growth and great transformation. The new perspective pivots on three simple questions about the ships entering and leaving American ports. Where did they come from and go to? What did they carry? Who operated them?

Below: Confederate Captain Raphael Semmes poses aboard the commerce raider *Alabama*, **which helped drive many Northern shipowners to foreign flags**

Courtesy the author, from the U.S. Naval Historical Center



Where Did The Ships Come From and Go To?

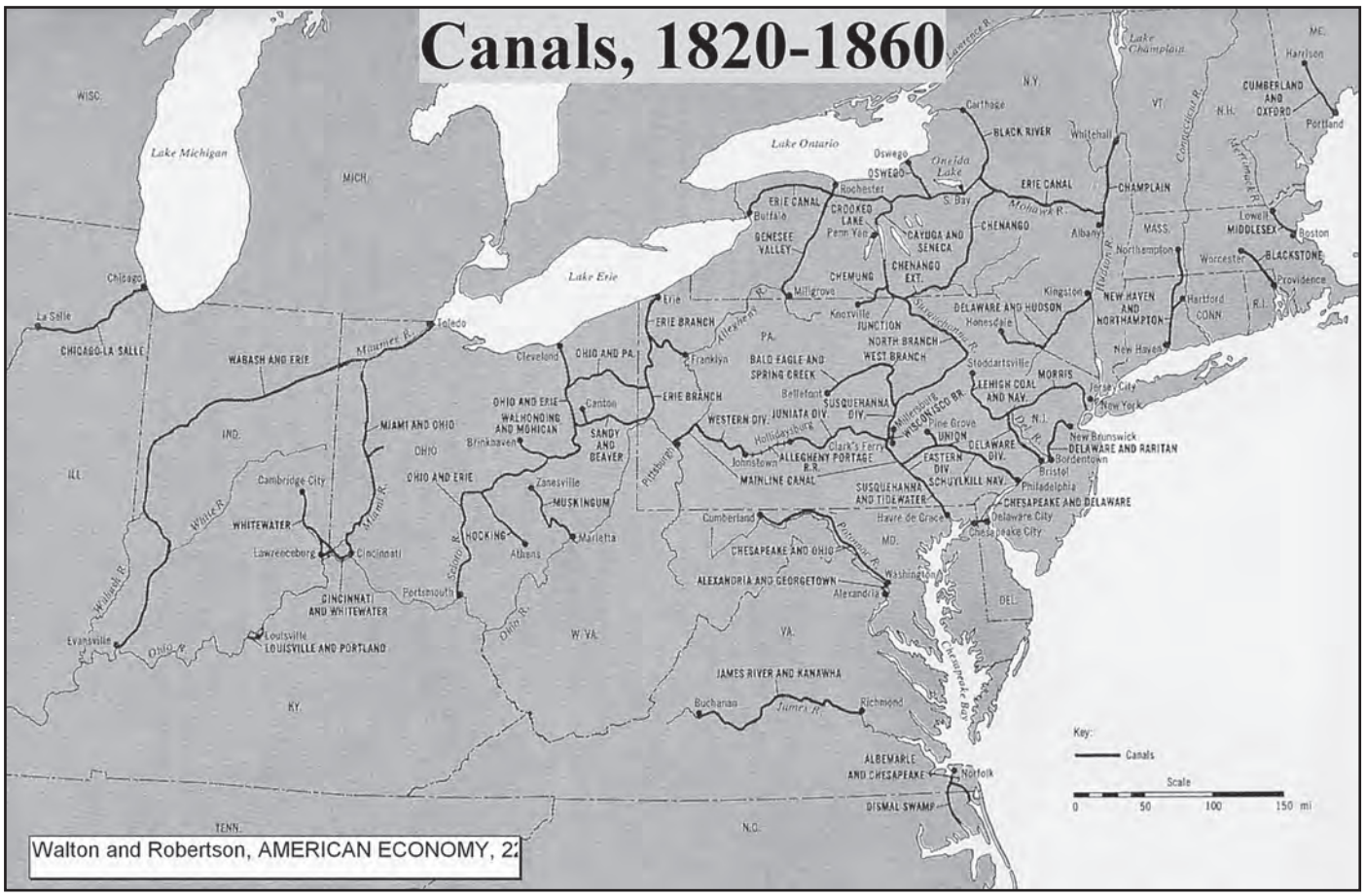
From 1820 to 1994, the brown-water shipping of the United States exceeded its blue-water shipping in both volume and value of cargo and passengers. American shipping moved on the country's rivers, lakes, and coastal waters, going from one American port to another, more than it carried goods and people to and from foreign ports. From the earliest days of the Republic, in 1789, cabotage laws restricted direct passage between American ports to American ships, guaranteeing to the nation's merchant marine a near monopoly of the brown-water shipping that came to dominate waterborne commerce in the United States. The legend of American shipping may have been Dana's *Two Years before the Mast,* but the reality was Twain's *Life on the Mississippi*.

The United States never traded internationally at the same rate the world did. Rather, it traded primarily with the world's largest economy—its own. The model for American international trade was not Britain, but Germany. Even today, America's greatest trading partners are Canada and Mexico, and since World War II most of the trade with those neighbors has moved by land, not sea. The most recent wave of globalization has finally reversed this pattern. International shipping now outweighs domestic shipping in the United States economy, but that transition has been shaped by the growth of other forms of transportation—trucking and aviation—as much as by a relative decline in domestic shipping.

Below: The United States is a nation of rivers.

Courtesy the author, from the U.S. Geological Survey





What Did They Carry?

Above: The canal craze of the 1820s and 1830s connected many of America's rivers and lakes with each other and the sea.

Courtesy the author

Throughout most of human history, ships offered the fastest and cheapest way to move people and cargo over long distances (more than 100 miles). The same rule of thumb governed penetration of the North American continent. The United States is a nation of rivers. Explorers and settlers moved inland along river routes and sent their produce to market back along the same paths. It is little wonder, then, that Americans would pioneer modern river navigation and embrace the canal craze that swept Western Europe in the late eighteenth century. Robert Livingston went to France in 1801 to purchase New Orleans, but he came home with much more. Not only had he purchased the entire Louisiana territory, he had signed a contract with Robert Fulton to build a steamboat for navigating the Hudson River. Both Fulton and Livingston realized that America's future was in the Mississippi Valley, and it was on that river that they set their sights for a steamboat monopoly. Steam navigation appeared and prospered in the United States twenty years before it caught on elsewhere because the United States had the perfect combination of economic growth, vast expanses of land, poor roads, and an abundance of rivers. It was no coincidence that Fulton was also a canal designer, a member of the Erie Canal Commission, and an avid promoter of the American canal craze of the 1820s and 1830s.

These inland waters and the canals that connected them did not, however, long dominate inland transportation. The short-lived canal craze in the United States seldom rewarded the many state ventures that aped

the wildly successful Erie Canal. Passengers and high-value cargoes always travel on the fastest available means of transportation. By the 1840s, trains were challenging ships for this market, often following the river and canal routes that floated the first American penetration of the continent. Even as the golden age of American shipping was dawning, the railroads were undermining the economic model of the clipper ships.

The pattern repeated itself in the twentieth century. Over-the-road wheeled vehicles took passengers and high-value cargo away from ships and railroads. Then airplanes carved out another share of the same market. Now pipelines carry much of the liquid gold that fuels the domestic economy. At each juncture, the new means of transportation entered service costing more than the competition, but technological change and economies of scale stole ever more market share from shipping.

Thus it is that the realm of the ship shrank to bulk cargo. Oil, iron, coal, grain, stone, and other bulk commodities are now the way of the ship. Even "break-bulk cargo"—the loose sacks and crates that used to be stacked and lashed by hand in the holds of cargo vessels—now travels in bulk. Beginning in the 1950s, loose cargo came to be increasingly packaged in standardized containers, which were stacked in bulk on custom-configured ships. As other forms of transportation cut into the market for water-borne transport, the shipowning and shipbuilding industries shrank, as did demand for maritime labor. The huge megaships that carry bulk cargo are increasingly automated, and the longshoremen previously required to handle break-bulk cargo have been replaced by mechanized container-handling equipment. Even passengers have been converted to bulk cargo, thousands of them lining up to board the floating cities that now define the ocean-going cruise industry. Overseas shipping to and from the United States now outweighs domestic shipping, but it comes and goes in bulk carriers that are too big to dock at the urban berths that used to line the waterfronts of America's ports.

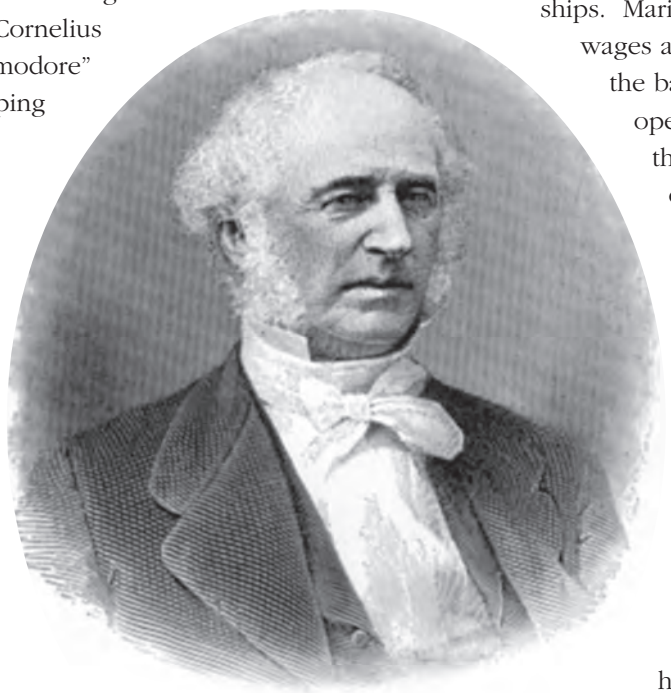
Below: Ships such as the *Caroline Maersk* carry thousands of containers at a time from one specialized port to another.
Courtesy the author



Who Operated Them?

Shipping generated many of the great family fortunes of the colonial era and the early American republic. Salem, Massachusetts, for example, watched the Derbys and the Crowninshields compete, intermarry, multiply, and prosper in the transition from the Navigation Acts to comparatively free trade. The Browns of Providence, Rhode Island, grew wealthy shipping slave cargo before assuaging their guilt through generations of philanthropy. Cornelius Vanderbilt kept the title "Commodore" even after he abandoned shipping for railroads; the naval rank hearkened back to his days as a teenager running ferry services in New York harbor in violation of the Fulton/ Livingston monopoly.

Less famous Americans built enterprises such as the Black Ball Line and Dollar Line into successful international shipping companies by finding a niche and filling it for a generation or two.



"Commodore" Cornelius Vanderbilt built his first financial empire in shipping.

Courtesy the author, from the Library of Congress

Success stories notwithstanding, American oceanic shipping always struggled to compete in international trade. The foreign flagging of American vessels during the Civil War highlighted the problem, but it did not start it. Rather the introduction of iron, steam-propelled vessels undercut America's natural advantage in the age of wood and exposed the country's liability in international competition. The reasons usually given for the failure of American shipping companies in international trade are regulation and the high cost of American labor and ships. These systemic liabilities moved Congress on many occasions to investigate the American merchant marine and experiment with various forms of subsidy. A great nation, so the argument went, needed its own merchant fleet to sustain its economic development and provide secure transportation in time of war. But the evidence repeatedly belied these assertions. The American economy grew while its international merchant marine shrank, and the country always managed to find adequate shipping to project its military power abroad.

Furthermore, national maritime policy was stymied by lack of consensus within the maritime industry itself. Shipbuilders always wanted tariffs to protect them against competition from abroad and they further wanted guarantees that cabotage-protected shipping in American waters would be carried on American ships. Ship operators wanted less expensive vessels and liberation from requirements to purchase costly American ships. Maritime labor wanted higher wages and better working conditions, the bane of shipbuilders and ship operators, and they also advanced the multiple, conflicting agendas of longshoremen, seamen, rated officers, engineers, and the other subspecialties of their trade. In the administration of Franklin Roosevelt, the country embraced an outright policy of direct subsidies to shipbuilders and ship operators, but even that failed to arrest the decline of the oceanic merchant marine.

Two phenomena drove that decline in the second half of the twentieth century. International competition in shipbuilding and ship operation grew even more intense as emerging nations, especially in Asia, combined low labor costs with generous government support to draw business away from the traditional maritime powers of the West. And trains, over-the-road vehicles, airplanes, and pipelines grew ever more efficient, reducing the number of passengers and the categories of cargo that moved by water.

The United States remains the world's largest international trader, and shipping remains a critical component of the American economic infrastructure. Still, shipping is increasingly invisible to most Americans, in spite of the fact that the megaships plying the world's oceans dwarf anything that our colonial predecessors might have imagined. Ships over one thousand feet in length – too large to pass through the Panama or Suez

canals, or the St. Lawrence Seaway – carry bulk cargoes from one remote, specialized port to another, many of them never coming within sight of the port cities that used to service the maritime trades. Tankers carrying more than 300,000 deadweight tons of oil bring most of their America-bound cargo to offshore pipelines in the Gulf of Mexico.

Bulk carriers of coal, iron, stone, and other industrial commodities move from specialized loading facilities to remote off-loading sites for transshipment to factories and power plants. Container ships, now more than 1,300 feet in length, carry upwards of 11,000 TEUS (twenty-foot equivalent units) from one custom port to another, where giant, automated cranes load and unload the containers to and from waiting truck chassis. All of these megaships experience unprecedented economies of scale, fueling the globalization of trade while they grow ever larger and more efficient in response to the steadily increasing volume of that trade.

The closest most Americans come to these behemoths is when they board the oceangoing cruise ships. Like the other megaships, these marvels of modern maritime engineering are largely the product of American innovation, even though most of them are built abroad. American Daniel Ludwig pioneered the super tanker. The solid bulk carriers originated on the Great Lakes. Containerization was the brainchild of American trucking magnate Malcom McLean. And the contemporary cruise industry was invented by Israeli/American Ted Arison. The modern cruise ships are somewhat smaller

Below: *Berge Stahl*, **the largest bulk carrier in the world, displaces 364,767 deadweight metric tons.**
Courtesy the author





Above: When the Walt Disney Company decided to enter the megaship cruise business, it selected a slightly retro design, complete with red smokestacks reminiscent of the great North Atlantic liners. *Disney Wonder,* **pictured here in July 2006 flying the civil ensign of the Bahamas, was built in Europe and registered in the Bahamas.**

Courtesy the author, from Shorelander

than the other bulk carriers, but their crews are much larger. Automation allows the bulk carriers to operate with crews of two dozen or less, while the cruise ships need vast crews, not to run the ship but to service the passengers.

Shipping remains, as it has always been, a mainstay of the American economy. The volume and value of waterborne commerce continues to grow every year, as it has throughout American history. And the United States continues to innovate and influence ships and shipping at home and abroad, as it has always done. The latest series of American innovations contributed to the rise of the megaships that dominate the world's shipping lanes. The difference now is that the oceangoing ships are increasingly invisible to the average American – and they are no longer American.

Notes

1 This article is drawn from Alex Roland, W. Jeffrey Bolster, and Alexander Keyssar, *The Way of the Ship: American Maritime History Reenvisioned, 1600-2000,* (New York: Wiley, 2008), where full discussion and documentation of the argument presented here may be found. I am indebted to my co-authors and to the American Maritime History Project, Inc., which sponsored the book.

Submerged Cultural Heritage of the Caspian Sea

by Viktor Kvachidze and Evguenia Anichenko



Viktor Kvachidze stands next to carved stone blocks from Sabail, Azerbaijan.

Photograph by Evguenia Anichenko

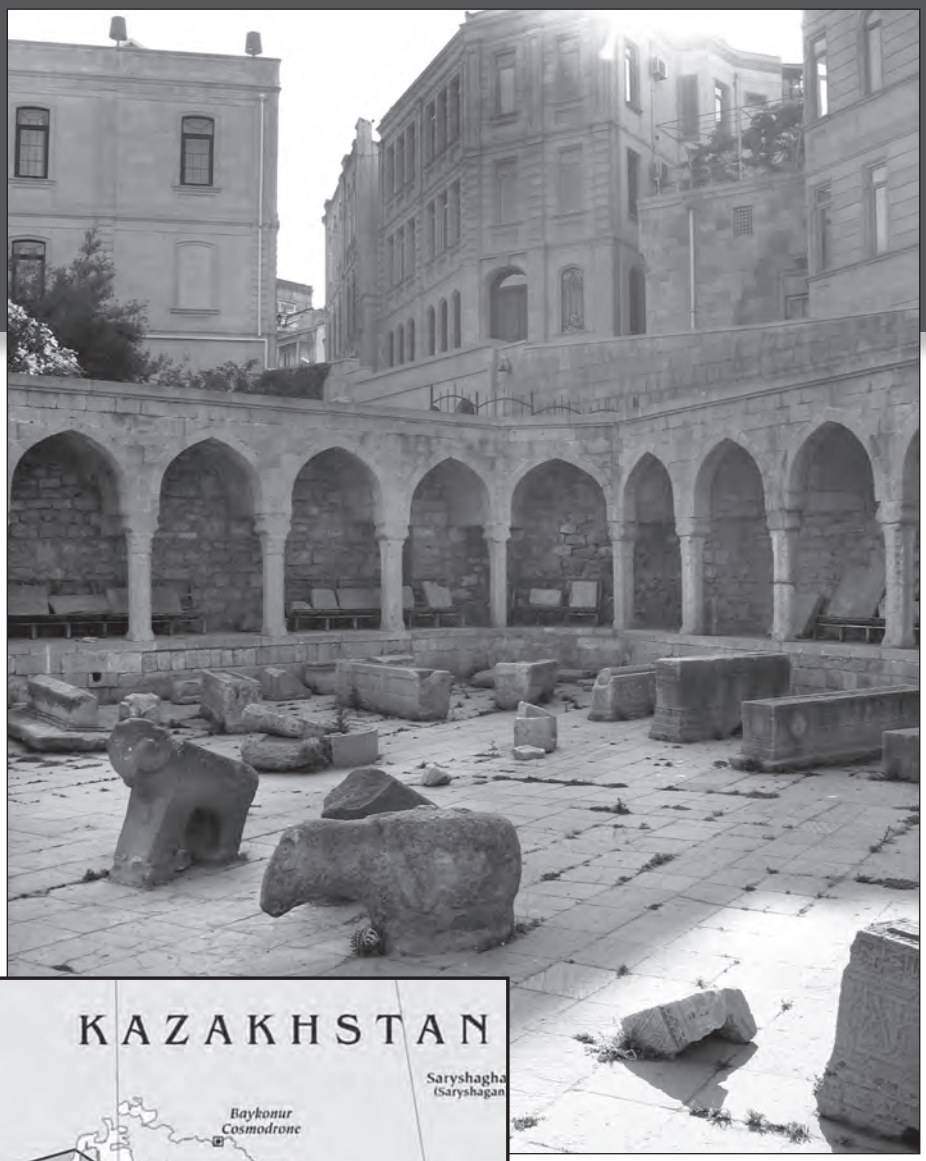
Viktor Kvachidze graduated from Baku State University with a major in history in 1956. He started his career as a teacher of history in a boarding school in the city of Mardakan. In 1967, he began working at Azerbaijan's History Museum, Baku. In 1969, he was appointed the head of the museum's underwater archaeological unit. Over the next twenty years the unit surveyed almost the entire coast of the former Soviet republic of Azerbaijan, locating submerged sites and recovering finds, currently curated by Azerbaijan's History Museum. Although regular field seasons came to an end in 1991 with the collapse of the Soviet Union, Viktor continued his research working with the acquired collections and publishing articles about the maritime history and archaeology of Azerbaijan. Throughout his academic career Viktor published over 100 articles in Russian, Azeri and English. His untimely death in January of 2008 prevented the completion of his book on the maritime history of the Caspian Sea, but his discoveries, pioneering spirit and generously shared knowledge will undoubtedly ensure the continuing interest in the submerged historical treasures of the Caspian Sea. Kvachidze is survived by his wife, daughter and one grandson, and will be greatly missed by friends and colleagues around the world.

The Caspian Sea, located on the outskirts of European civilization, has been veiled in mysteries and legends for centuries. Ancient Greek geographers argued whether it was a land-locked body of water or a gulf of the Northern Ocean. Medieval authors spared no ink describing the fierce local tribes of Gog and Magog, defeated and locked behind iron gates by Alexander the Great until Doomsday, when they would return to destroy the world. In the nineteenth century heated scientific discussions arose around the question of whether the great Asian river Amu Darya ever flowed into the Caspian, thus providing a navigable route to the rich outposts of Central Asian trade such as Khiva and Bukhara (Bartold 1996:263). Today we know much more about the Caspian Sea. Its geography, hydrographic characteristics and natural resources have been the subjects of thorough research for decades. The cultural resources of the sea, however, have received much less attention. Although the first underwater archaeological investigations in the region began in late 1960s, the extent and significance of submerged Caspian heritage is largely unknown to the professional community worldwide. The purpose of this article is to draw attention to the importance of underwater research in the region and summarize the results of previous work.

Jenya Anichenko is a native of St. Petersburg, Russia. She holds an MA degree in Medieval Studies from Central European University, Budapest, and an MA in Maritime studies and underwater archaeology from East Carolina University, Greenville, NC. Her interests are split between the maritime history and archaeology of the Caspian Sea and underwater heritage of the state of Alaska, where she currently lives and works as curator of history education at the Anchorage Museum.

The Sea and the People

The Caspian Sea is the largest landlocked body of water on Earth by both area and volume. Presently the sea is shared by five independent countries: Russia, Kazakhstan, Turkmenistan, Iran and Azerbaijan. Shallow along the northern shores, the sea deepens towards the south, reaching its maximum depth at about 1,025 meters. In its present shores the sea is a remnant of the large body of water that at some point in the





Above: Ancient market square in Baku's Old Town

Photograph by Evguenia Anichenko



Gobustan petroglyphs depicting boats.

Photograph by Betty Blair
Courtesy the author

distant past included the Aral and Black Seas (Magomedov et al. 1997:53). Six major rivers bring their waters into the Caspian Sea: the Volga, and Ural on the north, and Sulak, Terek, Kura and Arax on the west. The Volga, the biggest of these rivers, contributes about eighty percent of the Caspian's water. The south-north orientation and the significant depth variation create rich and diverse ecosystems, which in turn made the lands around the Caspian attractive for human settlement.

A number of cultures developed around the Caspian Sea during the Bronze Age. Our first written information about them comes from Sumerian-Akkadian inscription from the twenty-third century B.C. (Aliev 1995:60). Little, however, is known about the maritime adaptation of the people occupying the Caspian shores at this time. One possible clue may be the Gobustan petroglyphs of watercraft, which some Azeri scholars believe to be 5,000 years old.

Interest in the Caspian and the benefits of navigating it came, not surprisingly, from the Ancient Greeks, after they established colonies on the Black Sea. In 458 B.C. Herodotus first described the Caspian Sea as a completely isolated body of water. The first survey of Caspian shores was undertaken one hundred years later, by Aristobulus, the geographer of Alexander the Great. According to his account, traffic from India came down the Oxus (Amu-Darya) river to the Caspian, into which it flowed at the time (the river now flows into the Aral Sea), crossed the sea, went up the Cyrus River, then down the Phasis to the Black Sea, and so to Europe (Huntington 1907:580). Although many scholars are skeptical about the accuracy of this report, it remains the first discussion of navigation on the Caspian Sea, and it is remarkable that in this first report the Caspian is linked with Oriental trade.

This connection animated Western interest toward the Caspian throughout late antiquity and most of the Middle Ages. Remarkably, the Caspian route of Oriental trade has always been seen as a way of avoiding unfriendly encounters with rival nations. In the sixth century the Byzantine emperors explored the route along the northern and eastern Caspian shores as an alternative means of access to the Silk Route without going through the lands of hostile Persia (Boulnois 2005:240). In the thirteenth century the desire of South European nations to receive East Asian goods without the intermediary of the Arabs placed the beginning of Venetian and Genovese navigation in the Caspian. In the fourteenth century the transport

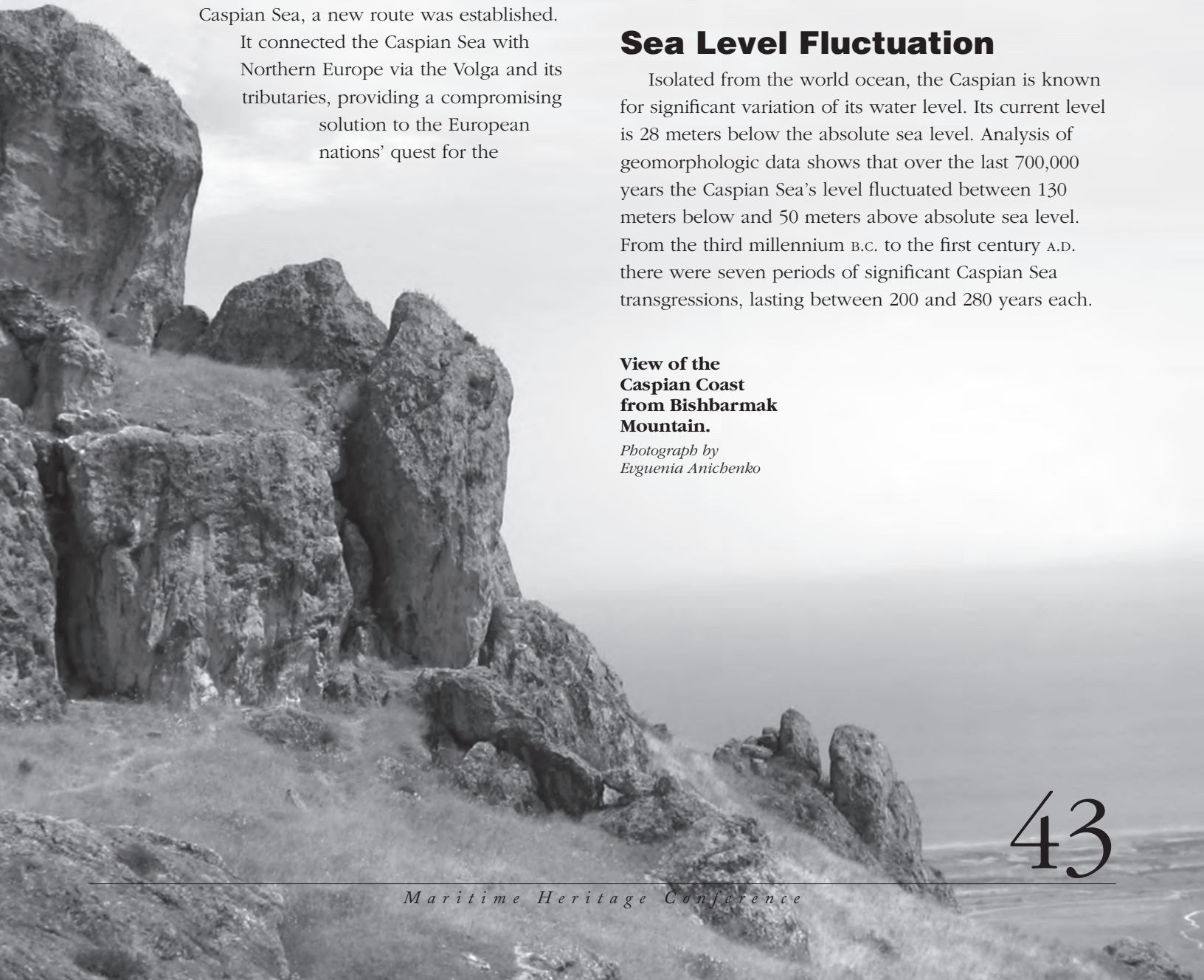
of Indian spices and Persian silks by Venetian traders amounted to about six or seven galleys a year (Bagrow 1956: 4-5). The ships employed on the Caspian were either built there, or transferred from the Black-Azov water system via a portage between Dniepr and Volga (Bagrow 1953:97). They sailed from Astrakhan, the city at the mouth of the Volga River, south to the ports of Derbent, Baku and Asterabad, and then back to Astrakhan. The trade goods were transferred to the Azov Sea via overland caravan routes or the Volga-Dnepr portage, and then were shipped to the Mediterranean via the Azov and Black Seas.

The North-South axis of trade, established in the Middle Ages, remained the predominant route of navigation through the following centuries. Once the growing Russian State defeated the remains of the Golden Horde in the Volga region in the fifteenth century and gained access to the Caspian Sea, a new route was established. It connected the Caspian Sea with Northern Europe via the Volga and its tributaries, providing a compromising solution to the European nations' quest for the Northeast Passage to China and "the fabulous East." The merchants of the British Muscovy company sailed all the way from the White Sea to Iran or the port of Mangyshlak on the eastern shore of the Caspian Sea, from where they continued overland to the trading posts of the Silk route (Hakluyt 1981:35, 71). Precious textiles, spices, gold and gems traveled this way to Moscow and Northern Europe (Riabtsev 2003:146).

The maritime culture of the Caspian Sea was not limited to international trade. Throughout the ages the seashores, especially the western and southern, were home to many nations and communities. While the southern coast was consistently within the Persian/Iranian domain, the land along the western Caspian shores was home to many states such as Khazaria, Shirvan and Aran. Although each of these countries had its own historic destiny, all of them faced the same challenge – the changing level of the sea.

Sea Level Fluctuation

Isolated from the world ocean, the Caspian is known for significant variation of its water level. Its current level is 28 meters below the absolute sea level. Analysis of geomorphologic data shows that over the last 700,000 years the Caspian Sea's level fluctuated between 130 meters below and 50 meters above absolute sea level. From the third millennium B.C. to the first century A.D. there were seven periods of significant Caspian Sea transgressions, lasting between 200 and 280 years each.



View of the Caspian Coast from Bishbarmak Mountain.

Photograph by Evguenia Anichenko

Scientists still argue about the reasons for the Caspian's sea level fluctuation. In brief, there are two major theories: geological and climatological. The geological theory credits the changes of the sea level to the horizontal and vertical movement of the core, seismic activity of the region and the changing dynamics of underground fluids. The climatological explanation attributes the changes of the Caspian Sea level to the fluctuating water balance received by the Caspian from the inflowing rivers, especially the Volga. The latter is believed to depend on the amount of cumulative precipitation throughout the Volga's catchment area.

Although the final scientific explanation of the sea level changes is still to be developed, the impact of these changes on the history of local states is evident. The sea claimed the coastal lands, and significantly affected the pattern of habitation and trade. Ultimately, it was one of the major historical forces affecting the region. One of the longest sea level regressions, for example, lasted for four hundred years, beginning at about 1000 A.D. and ending at the close of the fifteenth century. The sea level at that time was 6 meters below the current level, which means that many coastal communities of that time are now under water (Karpychev 2001:11).

This situation is recorded in historic chronicles and the notes of many travelers. The fourteenth century Italian geographer Marino Sanuto, for example, wrote: "the Caspian Sea is rising year after year and many good cities are already under water." The medieval port of Abaskun, located on the south of the Caspian Sea, which was known as a major center of international trade since the seventh century, vanished under water in 1304 (Hudud al – 'Alam 1970:134, 386). The third and last capital of the Khazar Khanate, the city of Itihl, located at the mouth of the Volga River, disappeared in the twelfth century. And the list of such examples goes on and on.



First underwater archaeological team of the Caspian Sea, 1969.

Courtesy the authors, photographer unknown

Underwater Archaeology in the Region: Previous Research

Although the potential for underwater research in the region has been well understood for centuries, the financial realities and the logistics of such research tempered the development of maritime archaeology along Caspian shores. The only Caspian country that undertook an attempt to study its submerged resources was Azerbaijan, one of the former Soviet republics, located between the ridges of the southeastern Caucuses and the western shore of the Caspian Sea.

In 1968 the Museum of History of Azerbaijan in Baku organized the first underwater research group in the region. The group, directed by archaeologist Viktor Kvachidze, consisted of terrestrial archaeologists who were trained to dive by the Soviet military, and volunteers from all around the country.

The main goal of the project was to conduct visual diver surveys of the coast of Azerbaijan from the north side of Apsheron Peninsula to the delta of the Kura River. The survey areas were determined based on the finds in the surf zone and information obtained from local fishermen. The sites located during the twenty years of regular fieldwork include several anchorages, two nineteenth century shipwrecks, a submerged thirteenth century building and three inundated settlements. The submerged settlements and structures received special attention due to both the richness of their material culture and the clues they provide for reconstructing the history of Caspian coastal communities.



Viktor Kvachidze (on the right) inspects a newly found ceramic bowl, Biandovan-1, 1984.

Courtesy the authors, photographer unknown

Curiously, the site that became the object of first hydrographic research has been well-known for at least two centuries. Locally known as Sabail, or Bail Rocks, the site is located in the Bay of Baku (the present day capital of Azerbaijan). Many nineteenth century travelers reported the remains of this beautiful building protruding above the water. In the 1940s the upper part of the building became exposed during a regression, allowing comprehensive





Above: Carved stone blocks from Sabail, displayed in the Old Town Fortress, Baku, 2006. Left: Detail of the Sabail block

Photograph by Evguenia Anichenko

research of the site. The fieldwork revealed a rectangular building surrounded by thick walls with fifteen towers. The outer wall surface was decorated with stone blocks with carved Arabic inscriptions and images of animals and human figures.

Over seven hundred of these blocks were recovered from the site. Several of them put together revealed the date of construction (the 632nd year of Hijra equals the year 1234 on the Christian calendar) and the names of the builders (Jafarzade 1947:4). Several stone anchors were found near the building's foundation. Azeri archaeologists and historians have not yet reached a consensus regarding the functional use of this structure. Some believe that it was a fort, protecting the entrance to the Bay of Baku, others argue that it is a Shirvan-shah palace or a caravansarai (Ismizade 1966:280, Aleksandrovich-Nasyfi 1927:158). The building, visible above the water surface just a few years ago, is presently underwater.

In 1970 another interesting underwater site was located 72 km south of Baku, in the vicinity of Cape Biandovan. Archaeological surveys in this area revealed remains of a medieval city tentatively named Biandovan-1. Archeological materials were found both in the water and on shore and consisted of stone house foundations, remains of kilns and tools of ceramic manufacture, as well as

Cape Biandovan



Twelfth century ceramic sherds from Biandovan –1.

Photograph by Betty Blair
Courtesy the author

silver and bronze coins, glass bracelets, and large amounts of ceramic sherds. Most of the recovered glazed ceramic was decorated with floral, geometric, zoo- and anthropomorphic designs similar to those of Sassanid, Iran, but several fragments of Chinese porcelain were also found. Other finds include bricks, glass bracelets, and necklaces, silver coins, and faunal remains. The complex of finds dates these settlements to the eleventh and twelfth centuries A.D. Some written sources suggest that the site is the remains of the medieval city of Gushtasfi (Kvachidze 1975:57-60).



Above: Archaeologists discuss ceramic finds at Binadovan-2.

Photograph by G. Guseinzade

Below: Fragment of Talysh bronze sword found in the vicinity of Sangi-Mugan Island, VIII-VII century B.C.

Photograph by G. Guseinzade



Five kilometers north of this site the archaeologists located another inundated medieval settlement, which became known as Biandovan-II. Material culture associated with this settlement included remains of buildings and large amounts of ceramics dating to the ninth through eleventh centuries.

The geological reconnaissance of the area shows that in the past this was an alluvial plane of the Kura River, the second largest river flowing into the Caspian Sea. In the Middle Ages the Kura was navigable along almost its entire length, connecting the Caspian with the inland regions of Azerbaijan, Armenia and Georgia, and with the Black Sea via the Rion River (Filippov 1881:61). Strategically and commercially important river deltas often provided ideal places for settlements. According to a tenth century Arabic chronicle, the delta of the Kura was no exception: the medieval coastal town of Mugan' located here was an important marketplace.

Stone and metal anchors, seventh century grappling hooks and other underwater finds from around the nearby Sangi-Mugan (Svinnoi) Island supported the notion that this was a site of regular maritime activities for hundreds, and perhaps thousands of years. One of the artifacts recovered here is a small stone carving of a human head. The object is very similar to finds from the Bronze Age settlement of Samus, located in the vicinity of the Ural River on the north shore of the Caspian Sea, which might indicate the existence of Bronze Age water transportation across the Caspian (Kvachidze 2000:5).

The easternmost point of Apsheron Peninsula, Cape Gurgyan, first came to the attention of archaeologists in the 1950s, when eleventh and twelfth century artifacts were discovered in the surf zone (Aslanov and Golubkina 1973:191-201). In 1984 the remains

of a twelfth century building were discovered during construction work. Following this discovery Kvachidze's group conducted an underwater survey between Cape Gurgyan, Zhiloi and the Pir Allah (Svyatoi) Islands.

The finds, consisting of eleventh through thirteenth century ceramics, anchors and building foundations, suggested that this was an inundated medieval settlement. In 1984, at the time of an archaeological survey, the thirteenth century coastline corresponded to the contour of 4.5 meters below the sea surface (Kvachidze 2003 (2):146).

Investigation of the site of Gurgyan became one of the last underwater archaeological seasons in Azerbaijan, and in the Caspian region in general. Despite its promising beginning, underwater archaeological research in Azaerbaijan was terminated in 1986 when the collapse of the Soviet Union cut off funding. Presently, the submerged cultural heritage of all Caspian countries is virtually unprotected. While most of the Caspian states consider archaeological sites to be the property of the state, usually managed by the ministries of culture, none of them currently has a specialized underwater archaeology branch. Active oil and gas exploration along the seabed adds to the vulnerability of these resources. At the same time, thanks to twenty years of Viktor Kvachidze's dedicated work, the field of underwater archaeology made its first, and perhaps the most important steps in the Caspian region.



Two divers are recovering an anchor stone in the vicinity of Cape Gurgyan.
Photograph by G. Guseinzade

Tribute to Viktor Kvachidze

Images of Baku

Photographed by Evguenia Anichenko

The news of Viktor's death arrived as we were trading back and forth the drafts of this article, putting on hold not just its completion, but also the entire development of the field of underwater archaeology in this region. Kvachidze's knowledge of the Caspian history and material culture, his experience and dedication to underwater research in the region were unparalleled, and it is our deepest hope that his work will inspire and lead a new generation of Caspian underwater archaeologists.





Above: Medieval grave stone, Baku. Left: Gates of Old Town, Baku. Below: Old Town Fortress, Baku. Opposite Top Right: Portal detail in the Old Town Fortress, Baku.



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The First Mariners of the New World

By Jim Cassidy, M.P.A., Ph.D., R.P.A.

NATURAL RESOURCES AND ENVIRONMENTAL AFFAIRS
Marine Corps Air Ground Combat Center

Introduction

In recent years a number of archaeological excavations in coastal Alaska and the Northwest Coast (Ames and Maschner 1999; West 1996), as well as along the California Coast (Erlandson and Colten 1991), and even South America (Dillehay 1989, 1997; Meltzser et al. 1997) have yielded an ever increasing number of radiocarbon dates that either coincide with or predate the Paleo-Indian mammoth hunters. In the last decade the idea of a Paleo-Coastal tradition has been supported by the identification of more than forty Southern California coastal sites that date to the terminal Pleistocene/early Holocene transition (12,000-8,000 years ago) (Cassidy et al. 2004; Cassidy 2007; Dixon 1999; Erlandson and Moss 1996; Fedje and Christensen 1999; Jones 1991, 1992). This has resulted in an increased interest in the origins of early maritime peoples who may have been among the first to colonize the New World.

Archaeological Evidence of Late Pleistocene/Early Holocene "Seafaring"

Processes that result in the destruction of coastal and island sites, such as sea level rise and coastal erosion, have long been lamented as reasons why early sites have been difficult to find. In spite of this, the number of sites that have been discovered strongly suggests that these only represent the proverbial "tip of the iceberg" and many more must have existed that have either been destroyed, or are yet to be discovered. A number of early insular sites have already been found in the Gulf of Alaska, such as the Anangula site on Ananiuliak Island that dates to 10,000 years before present (B.P.) (Laughlin and Aigner 1966), Hidden Falls on Baranof Island dating to 9,500 years B.P. (Davis 1989, 1996), Ground Hog Bay on the Chilkat Peninsula at 9,200 years ago (Ackerman 1968), On Your Knees Cave on Prince of Wales Island at 9,200 years ago (Dixon 1999), and sites on the Queen Charlotte Islands that date to between 8,300-9,300 years B.P. (Fedje and Christensen 1999).

Four island sites dating to this time period have also been identified on the California Channel Islands. These include Daisy Cave on San Miguel Island that dates in excess of 12,000 calendar years (Erlandson et al. 1996), Arlington Springs on Santa Rosa Island at about 13,000 years B.P. (Johnson et al.1999), Punta Arena on Santa Cruz Island at 8,400 years of age (Glassow 2000), and Eel Point on San Clemente Island at 8,500 years B.P. (Cassidy et al. 2004). All of these sites date in excess of 8,000 years before present and necessitated the use of watercraft to cross open bodies of water spanning from 10 to 80 km in distance. Not only does this reflect a widespread distribution of insular maritime locations, but also suggests that this was not a short-lived adaptation. One of the most intensively studied of these sites is Eel Point, where a series of ten radiocarbon dates from the Early Holocene layer spans an occupation period of over 500 years (Raab et al. 1994).

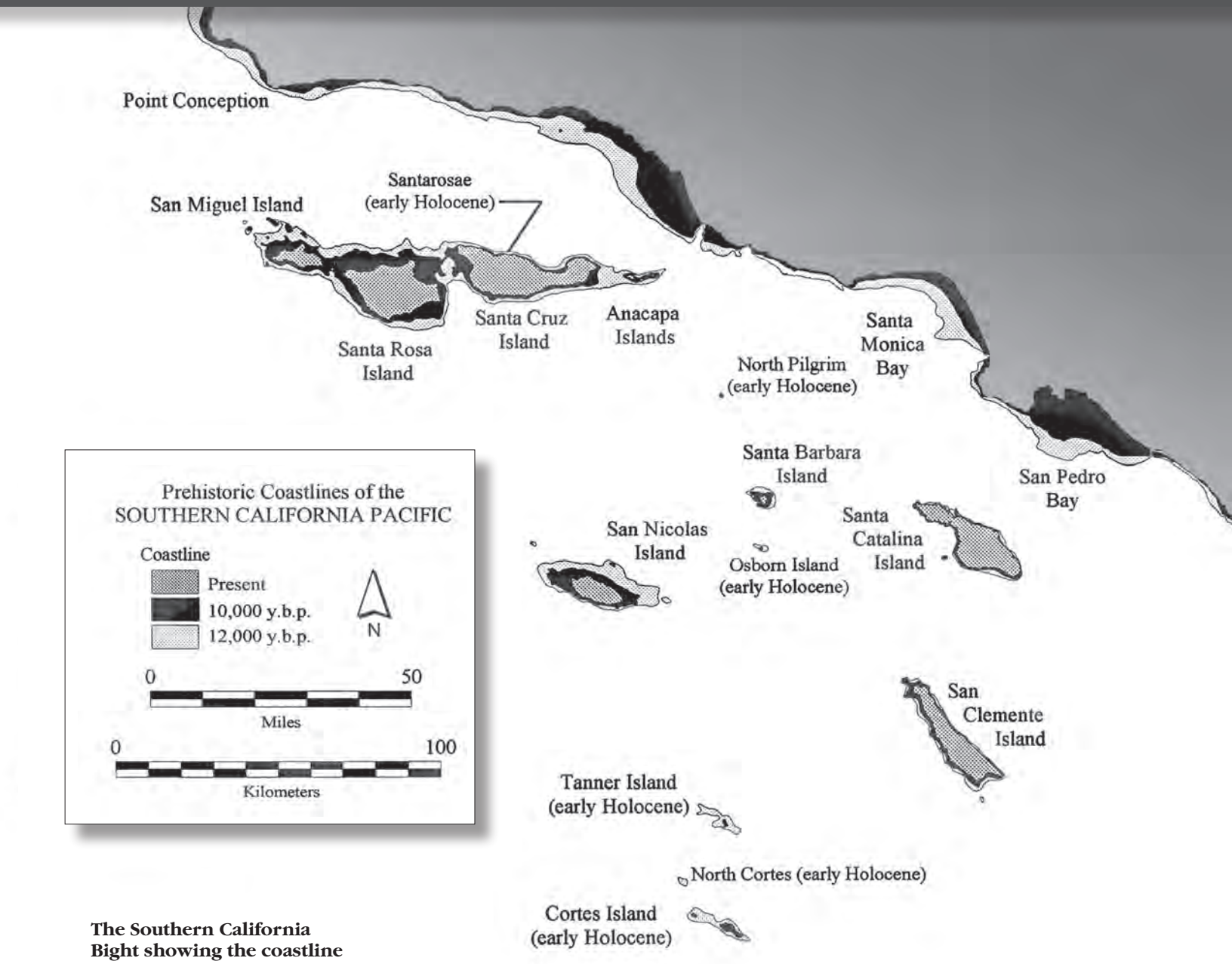
Thus, a widespread pattern of occupation of islands and insular locations during the early Holocene would appear to argue against any assumption that these were merely casual visits made through the use of rudimentary watercraft. In fact, to the contrary, the emerging pattern appears to suggest that these sites represent widespread seafaring populations who utilized watercraft transport on an ongoing basis and formed a distinctly different type of

(Text continued on page 54)

Having spent my early years living along the coast of California, I have always nurtured a fascination with the sea and its limitless possibilities. Throughout my adult life I have often found myself far from the ocean, but inevitably drawn back as though by the tides. As a young Sea Explorer, based out of King Harbor in Redondo Beach, there were endless summers at the beach, harbor and sailing among the Channel Islands. As an adult I have had the pleasure of lecturing aboard cruise ships in both the Caribbean and Mediterranean Seas on the unique evolution of maritime societies.

It was my good fortune, at mid-career, to return to academia and retrain as an Archaeologist, with an emphasis on the development of maritime cultures across the north Pacific Rim. This included a Masters degree focused on the origins of early Holocene mariners who resided on San Clemente Island 9,000 years ago. My doctoral dissertation, completed at the University of California Santa Barbara, was conducted on the northern coast of the Sea of Japan, in the Russian Far East. This explored the transition of mariners from hunter-gatherer-fishermen to Bronze Age complex societies in Northeast Asia. As a consequence, it is my privilege to be co-editor, and author, in the soon to be published journal of North Pacific Prehistory, Volumes I and II. The abstracts of articles for these volumes can be found at www.northpacificprehistory.com

— Jim Cassidy



The Southern California Bight showing the coastline at 12,000 years B.P., 10,000 years B.P., and at present.
Courtesy Judith Porcasi

adaptation than terrestrial hunters who occasionally exploited littoral settings. Further, it appears likely that seafaring populations dispersed along the North Pacific coasts very rapidly during a period of dramatic climatic warming and sea-level rise at the terminal Pleistocene/early Holocene transition.

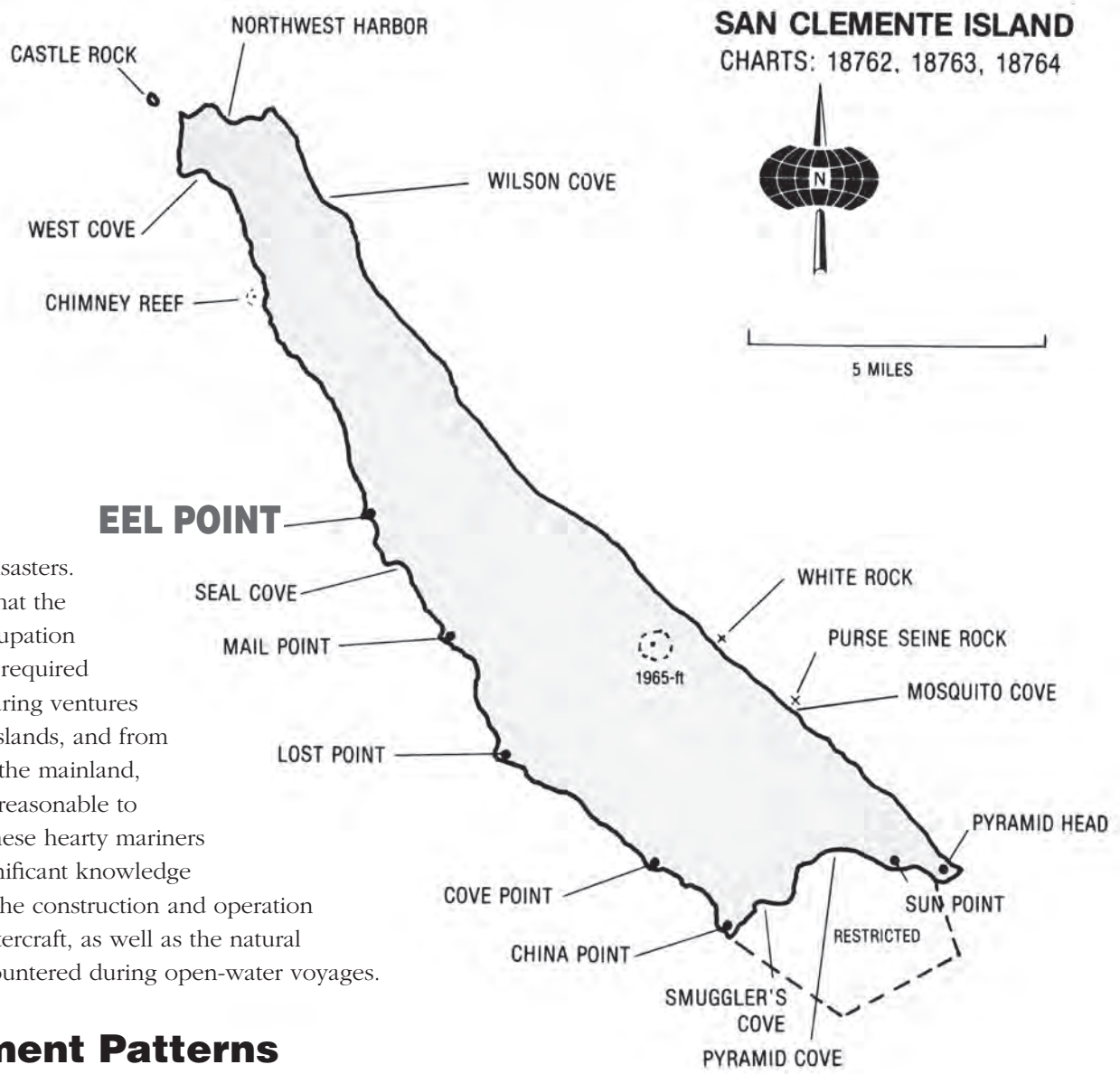
Although the existence of marine adapted peoples and seafaring populations have been well established for Southeast Asia, Australia and Japan during the late Pleistocene and early Holocene (Bednarik 2003; Earlandson 2000), the same cannot be said for the Americas. Aside from an assumed logic in the logistical tracing of island proximities on a map, there are many other issues pertaining to geography, climate, biological reproduction, social organization, settlement pattern and technological skills that must be addressed before we may advocate the existence of any form of seafaring culture, and especially maritime migrations along the west coast of North America.

Seafaring vs. Maritime Adaptations

In instances where maritime sites are identified in littoral settings it is often not possible to determine if the site is simply an expansion of existing terrestrial populations to the coast, or the intrusion of a new maritime adapted group. In fact, the term "maritime" is usually assumed to refer to the exploitation of marine resources, and does not specifically refer to differences between land-based populations who exploit littoral settings and seafaring groups who venture beyond the shoreline. However, in the case of insular island locations this task is made somewhat easier through the necessary assumption that "seafaring" (i.e. the use of watercraft) must have been involved (Keegan and Diamond 1987). Thus, we may define "maritime migration" as the use of seafaring technology to occupy new coastal locations by people who primarily subsist on marine resources. This suggests that seafaring groups should represent a qualitatively distinct adaptation from coastal collectors who simply took advantage of easily accessed littoral resources. The ability to construct seaworthy watercraft, and pilot them in open waters, presumes a significantly more complex mode of social organization and command of technology than that found among generalized foragers (Kelly 1995).

Marine Environment

Before we can evaluate the robustness of such ideas we must address the substantial technological challenges posed by open-water conditions for the use of watercraft. Even today, to say nothing of during the Last Glacial Maximum, the challenges posed in northern latitude regions in the form of frigid temperatures, high precipitation, low visibility, high energy winds and related wave amplitudes, and forceful currents, all pose life-threatening challenges for people involved in any proposed maritime passage. While conditions in the more temperate waters of the California Channel Islands are considerably less challenging, they must still be taken seriously. Even in modern times, small craft that venture into open waters between the mainland and the Channel Islands frequently encounter two- to four-foot swells, gale force winds, strong currents, and seasonally frigid conditions, which result in

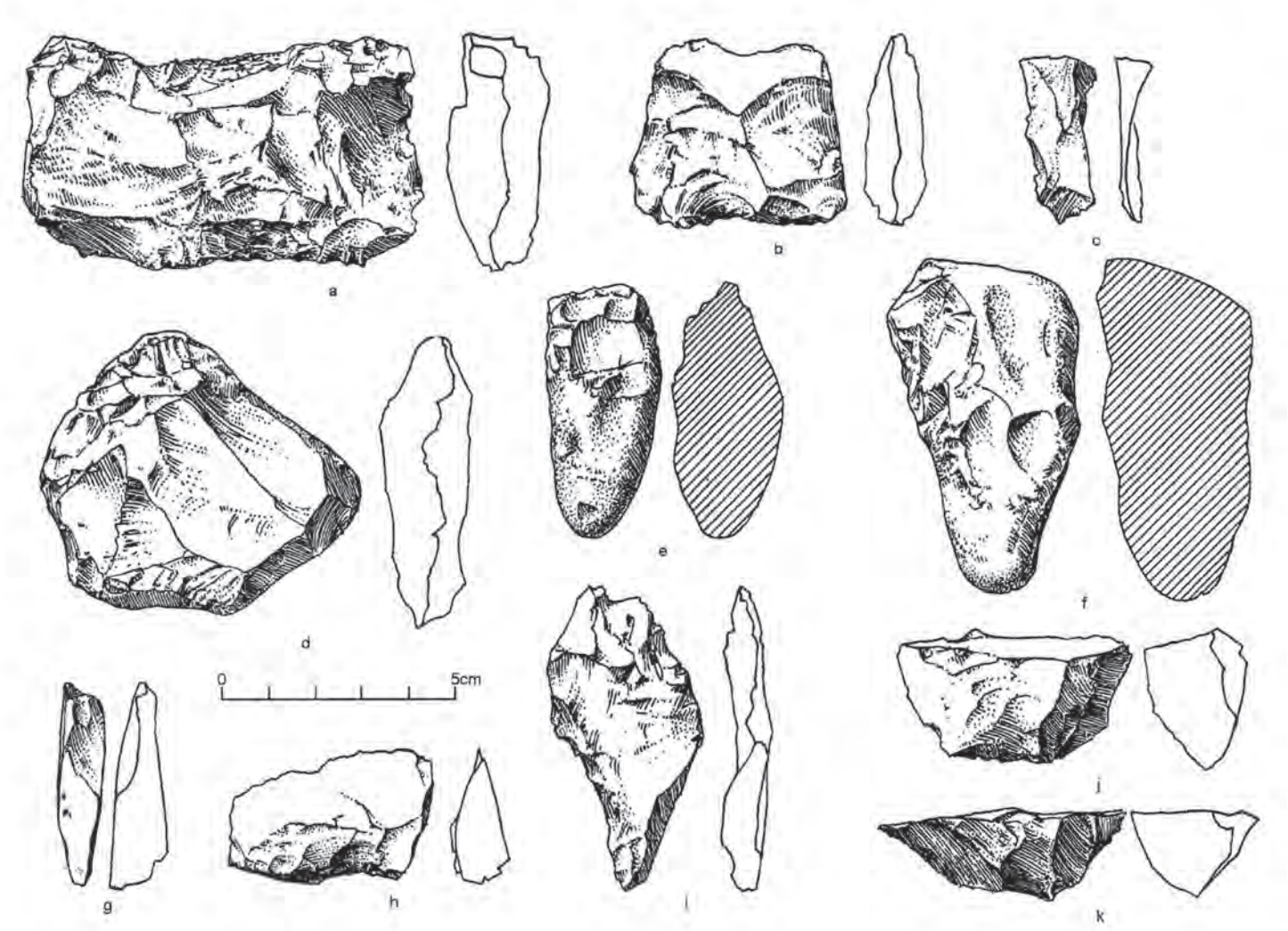


unexpected disasters. If we accept that the long-term occupation of island sites required repeated seafaring ventures between the islands, and from the islands to the mainland, then it seems reasonable to assume that these hearty mariners possessed significant knowledge pertaining to the construction and operation of reliable watercraft, as well as the natural elements encountered during open-water voyages.

Settlement Patterns

A picture of terminal Pleistocene/early Holocene settlement of island locations is only beginning to emerge. A number of the sites are from cave deposits, or eroded beach terraces, where it is difficult to reconstruct settlement data. Other sites are covered by the overburden of later occupations. The ephemeral nature of some deposits suggests that they may have been short-term seasonal camps. On the other hand, other locations appear to reflect long-term occupations of at least a semi-permanent nature. At present the most intensively studied early Holocene site is **Eel Point** on San Clemente Island, California.

These excavations have revealed a wide range of artifactual and faunal evidence that includes habitation structures and work areas. These features yielded dates that span a 500-year period and suggest the site may have been occupied on a semi-permanent basis (Cassidy 2007). The location of early sites on the Channel Islands is associated with rocky headlands adjacent to deep submerged canyons that cause the upwelling of cold waters and enriched marine resources. This may suggest that they were attractive locations for accessing deep-water species, rather than purely littoral resources.



Above: Selected tools from the early Holocene component at Eel Point, San Clemente Island, California: (a) and (b) scraper planes, (c) micro-blade, (d) wood splitting wedge, (e) hafted reamer with ochre stain, (f) hand-held reamer, (g) engraving burin, (h) notched spoke-shave, (i) drill, (j) and (k) micorlith cores.
Courtesy the author

Archaeological Correlates

In the Eel Point study a comparison was made of the chipped-stone tool-kit employed by historic Chumash boatwrights, identified in the ethnographic notes of J. P. Harrington (Hudson, Timbrook and Rempe 1978:21-53), with the stone tools found among the excavated materials in the site. Through an analysis of morphological features, tool replication, use-wear experiments, and high-power microscopic use-wear analysis (Kelly 1980), it was possible to identify a comparable tool-kit from a localized area in the early Holocene component of the Eel Point site that met all of the technological requirements of watercraft construction and maintenance. These tools include choppers, flake cores, retouched and utilized flakes, drills, reamers, scraper-planes, sandstone abraders, tar smeared pebbles, a worked sea mammal rib (with asphalt stains), wood-splitting wedges, microlithic cores, and a burin (Cassidy et al. 2004).

The Eel Point stone tool-kit bears a remarkable resemblance to stone tool assemblages identified in Northwest Coast sites for the same time period (Matson and Coupland 1995; Ames and Maschner 1999). Whether this is a reflection of contact between the two widely separated regions, or is a function of similar solutions for similar problems (i.e. independent invention)

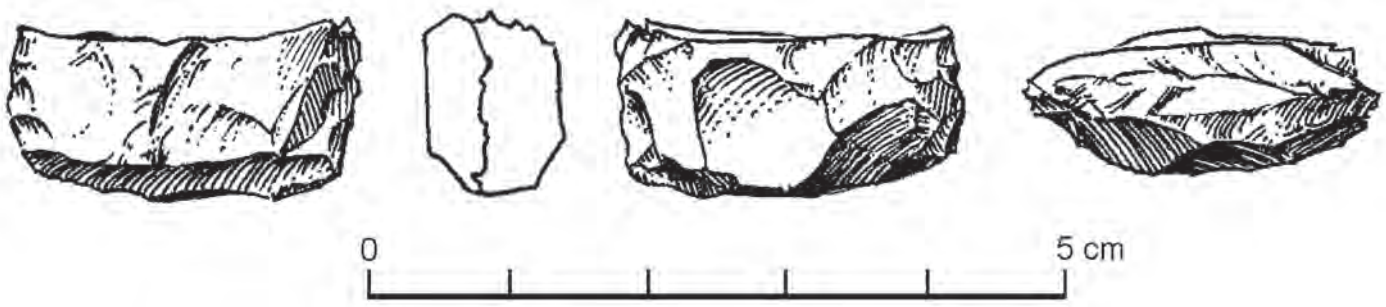
is a matter of ongoing investigation. It does appear to suggest, however, that bifacial projectile points are more closely associated with terrestrial hunting practices, and early sites with strongly maritime oriented hunting strategies tended to heavily rely upon flake-core assemblages, augmented by microliths and chopping tools.

Subsistence

An important issue pertaining to the survival of maritime populations, on islands with relatively depauperate terrestrial resources, is the ability of human populations to sustain themselves on a solely marine diet. The differences between specialized terrestrial and aquatic hunters and gatherers have been noted in subsistence practices, as well as their techno-economic orientations and social organizations (Schalk 1977; Hayden 1997; Yesner 1980). Once access to highly productive aquatic resources has been achieved, through the development of specialized social and technological elaborations, it appears that marine resource procurement strategies are fully comparable to terrestrial ones. Recent research has demonstrated that aquatic resources such as fish, sea mammals and shellfish represent nutritional packages that are comparable to those found on land (Erlandson 1988; Glassow and Wilcoxon 1988; Meehan 1977). These findings have been supported by isotope studies of human remains found in island locations that reflect a diet made up almost exclusively of marine resources such as fish, shellfish and sea mammals (Dixon 1999; Foley 1987). Also, recent research on the California Channel Islands suggests that dolphins played a more important role in subsistence activities during the early and middle Holocene than previously suspected (Glassow 2000; Porcasi and Fujita 2000; Raab et al. 1995). This further supports suppositions pertaining to the importance of the use of reliable watercraft in deep water hunting activities.

Those individuals who, through the possession of sacred knowledge and control over resources, such as watercraft, have always held the power of life and death over their peers and occupied positions of high status (Ames 1994; Ames and Maschner 1999; Hayden 1997). As specialized knowledge for the construction and piloting of privately owned watercraft developed, so would the ability of individuals to acquire unequal amounts of wealth and power. An example of the expression of ritual knowledge and power was identified in the Eel Point site, where it appears a chipped-stone effigy of a canoe was cast into the fire of a hearth in an effort to solicit the favor of supernatural forces (Cassidy 2006).

Below: Possible chipped-stone boat effigy from the early Holocene component of the Eel Point site, San Clemente Island, California.
Courtesy the author



Reproductive Viability

On logical grounds, the concept of any form of migration implies the distribution of sufficient sized populations to maintain reproductive viability, defined by Birdsell (1968) as a minimum of approximately 175 individuals (Wobst 1974). Since the known terminal Pleistocene/early Holocene maritime sites ranged from small ephemeral artifact scatters to band-sized settlements, it must be assumed that they were incapable of independently maintaining reproductive viability over the long span of time reflected in the existing archaeological record without regular contact with other groups. This means that the use of watercraft to visit other nearby groups for the purpose of social interaction and obtaining mates must have occurred on a regular and ongoing basis.

Conclusions

The fact that an increasing number of early sites are being found in insular locations verifies that people commanded the regular use of watercraft in the New World much earlier than has been generally acknowledged in the archaeological literature. It seems reasonable to assume that they could employ these crafts at will to visit nearby locations for the purposes of social interaction and obtaining mates. The use of watercraft could even provide a degree of autonomy and anonymity when engaging groups who did not command the use of watercraft and could have taken the form of either friendly contact or raiding to obtain mates and other resources (Kelly 1995).

Seafaring activities would have placed specific demands upon a group's social organization, group and individual knowledge, and technological skills. This, in turn, may have resulted in the development of a qualitative difference between generalized foragers who exploited littoral resources and some truly maritime people who may have developed the potential to become affluent foragers (Arnold 2001:3; Kelly 1995; Meighan 1990). This label could be applied to some early seafaring groups who developed the ability to construct sophisticated forms of watercraft, private ownership and control over the use of watercraft, secret knowledge pertaining to boat construction, and the ability to control the distribution of resources obtained through their use.

The isolated nature of the Eel Point site on San Clemente Island permitted the examination of a stone tool assemblage that was virtually free of mainland terrestrial influence. What was found was a well-developed flake-core industry entailing the fabrication of formal tools that were well suited for the construction of composite watercraft from wood. Accumulating evidence reveals a pattern of widespread settlement of coastal and insular locations during the terminal Pleistocene/early Holocene transition. These highly mobile foragers were fully dependent upon the procurement of marine resources for survival, and commanded the technological skills to construct, maintain and pilot reliable watercraft in open waters on a regular basis. The late Pleistocene/early Holocene transition was a period of ameliorating climatic conditions and increasing resource abundance that provided great opportunities for accelerated processes of independent invention and related individual aggrandizement through increased mobility and the colonization of new territories.

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Historic Naval Ships Association

The Eighth Maritime Heritage Conference and the 42nd Annual Historic Naval Ships Association Conference

by William N. Tunnell, Jr., President of HNSA
Jeffrey S. Nilsson, Executive Director of HNSA
Frank V. Thompson, Curator Branch of the Naval Historical Center, Washington, D.C.



One of the Victory class of cargo vessels, the SS *Lane Victory* was built in Los Angeles and was delivered to the War Shipping Administration in June 1945. She went on to serve the Merchant Marine in three wars, with great distinction, hauling munitions and supplies to troops. Designated a National Historic Landmark in 1994, she is berthed in San Pedro, CA. from whence she makes regular sea-going trips. She is operated by the United States Merchant Marine Veterans of World War II.
Courtesy the SS Lane Victory

The Eighth Maritime Heritage and the 42nd Annual Historic Naval Ships Association (HNSA) Conferences were held concurrently 9 -12 October 2007, in San Diego, California. Although HNSA has been hosted by several west coast organizations, 2007 marked the first time the Maritime Heritage Conference has not been held on the east coast of the United States.

The Maritime Museum of San Diego acted as the primary host for the Maritime Heritage Conference, while the USS *Midway* Museum hosted the HNSA conference aboard *Midway*.

On 8 October, SS *Lane Victory*, one of the last surviving World War II era



Victory ships, arrived in San Diego under her own power from her home port of San Pedro, CA., carrying over fifty passengers scheduled to attend the Conference. On the afternoon of 9 October, she was formally enrolled in the World Ship Trust by Lord Ambrose Greenway, World Ship Trust Chairman, in a ceremony held aboard the ship.

The papers and presentations for the HNSA conference on the *Midway* covered a broad spectrum of topics addressing the practical and perhaps

On the afternoon of December 10, 1966, representatives from five former United States naval vessels that were open as museums met in the wardroom of the battleship *North Carolina* in Wilmington, N.C., and established what would become known as the Historic Naval Ships Association. From that small beginning, the organization has grown into a global institution and has come to be regarded informally as "the world's third largest navy." Indeed, as of the beginning of 2008, fleet members representing twelve nations number 115 organizations with 175 vessels of all types. The founders desired to create a forum which would enable them to exchange ideas, discuss problems, and provide mutual support for each other. The original tenets of the founders remain to this day: to honor the men and women who joined the naval service of their nation; to educate the public, both young and old, about the great naval heritage of their nation, and to inspire men and women to serve their country.

To step aboard one of these vessels is to step back in time and, for a brief moment, be transported to far off places such as the Normandy beaches, Trafalgar, the Mediterranean, and Leyte Gulf and experience moments in history that shaped the world we live in.

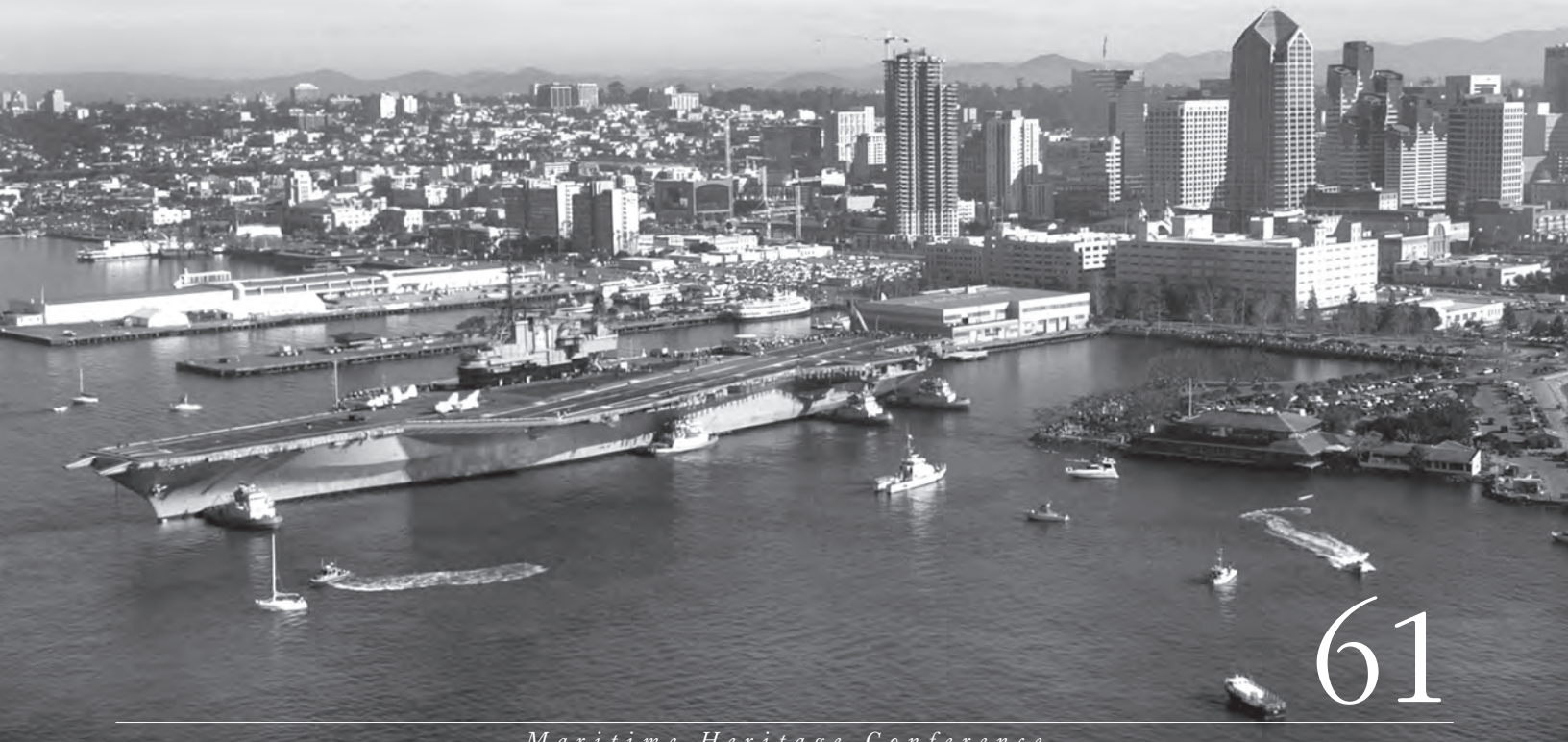
It is often said that ships are more than just a collection of pieces and parts hewn from the fabric of the Earth. Indeed, these ships are often personified by the spirits of the men and women who served aboard them. These vessels have sailed through major eras in world history. As time marches on, they will be the only tangible survivors of some of the most momentous historical events. HNSA strives to preserve this legacy through an assortment of educational programs designed to "keep the ship alive." Methods vary, but visitors now have the chance to hear the distinctive rumble of a Fairbanks Morse diesel engine, watch re-enactors in period uniforms demonstrate rigging sails, and listen to active duty personnel relate sea tales. Many of the member organizations have overnight encampments, as well as interactive educational programs specifically for the younger visitor. If, after your visit to one of these ships, you have a better understanding and appreciation of why men and women go to sea in ships in service of their countries, HNSA will have succeeded in its mission.

— Dr. Edward J. Marolda
Director of Naval History (Acting)
United States Navy

mundane side of caring and maintaining an historical ship museum. Listing every session would consume much more space than allowed in this concise review, but some of the highlights included an interesting and timely co-presentation by Mac McLaughlin, President and CEO of the USS *Midway* Museum and Ms. Patricia Rogers, Coordinator of Historic Exhibits at the Carnegie Science Center, dealing with the management of the volunteer programs that are so vital to the livelihood and success of any museum program. Another important highlight was the series of presentations concerning the emerging issues of dry-docking historic ships for long overdue hull maintenance and mooring system development. The signature papers in this series were given by Mr. Arron Washington of USS *Pampanito* and Mr. William Selig. Mr. Washington talked about the dry-docking of the historic

The historic USS *Midway* served as one of the Conference locations and, most appropriately, as the meeting site for the HNSA conference. *Midway* is pictured upon her arrival at the Navy Pier, San Diego.

Courtesy the USS Midway *Museum*





Several Maritime Museum of San Diego vessels are on the list designated as Naval Historic Ships, among them B-39, the Soviet Attack Submarine.

One of a fleet of diesel electric submarines the Soviet Navy called "Project 641," B-39 was commissioned in the early 1970s and served on active duty for more than twenty years. Three hundred feet in length and displacing more than 2000 tons, B-39 is among the largest conventionally powered submarines ever built.

Photo by Maggie Piatt-Walton, MMSD

submarine *Pampanito* and the many costs involved. In response to several dramatic mooring system failures at a couple of the historic ships' sites, Mr. Selig, of the Naval Facilities and Engineering Command, discussed the need for proper research and engineering in designing an effective mooring system. An additional theme in his talk included a discussion on planning and executing safe towing plans. Reinforcing these discussions was a very dramatic presentation delivered by Ms. Susan Maranoff and Mr. Matt Woods representing the *Intrepid* Sea-Air-Space Museum. The talk centered on the planning that went into moving the aircraft carrier *Intrepid* from a berth that she had occupied since 1982 and towing her across New York harbor to a drydock in Bayonne, N.J. The information they presented gave a sobering sense of the reality and the expense of establishing and maintaining ships as museum pieces. Rounding out the conference were additional papers that emphasized education, museum collection management, long-term planning, shipboard history, ship preservation as well as a disaster management case study.

The Historic Naval Ships Association conference concluded with a gala awards banquet Thursday, 11 October, with a cocktail reception where Captain Frank "Rocco" Montesano, President of HNSA, bestowed the association's highest honor, the **Casper J. Knight Award**, to Ms. Gloria Carvalho, the Navy Ship Donation Manager for the Naval Sea Systems Command in Washington, D.C.

Building on the success of the Conference, planning is underway for the future. In November 2008, HNSA will return to the east coast and hold its annual conference at Patriots Point Naval & Maritime Museum in South Carolina.

Editor's Note: As this issue goes to press, the Maritime Museum of San Diego has just been informed that the U.S. Navy has accepted the Museum's application for the donation of USS *Dolphin*, AGSS 555. *Dolphin* is one of the most historically important vessels in the technological history of the submarine, and boasted a longer career with San Diego as its home port than any U.S. Navy ship extant. With the addition of the USS *Dolphin*, the Maritime Museum will have on exhibit no fewer than six ships of the HNSA fleet, forming the largest and most varied "task group" of the world's "third largest navy."

What does the future hold for the Historic Naval Ships Association? Although no one can predict with absolute certainty what will transpire, there are several readily apparent themes that will set the Association on its course through the early twenty-first century.

Continued growth of the organization with the establishment of new ship museums is expected, and as of 2008, there are eleven organizations in the United States alone attempting to acquire former U.S. Navy ships for museum use. On a worldwide basis, there are any number of organizations in the process of acquiring ships for preservation. In the United Kingdom alone, there are virtually hundreds of groups trying to save ships of various sizes (not all of these ships are naval ships). Complementing these new organizations, the Association continues its efforts to recruit established museums that are not yet part of the HNSA family. The most daunting challenge by the membership will continue to be the need to secure adequate funding resources necessary to procure, preserve, restore, and maintain these ships.

HNSA will continue to provide a forum and serve as a conduit through which information can be passed to assist the membership in this endeavor.

Technical resources will become an increasingly important part of HNSA. Technology that would have seemed science fiction when the Association was founded in 1966 is a reality today. Capitalizing on computer and communication technology makes it possible for HNSA to be an increasingly effective global organization. Member organizations continue to adopt new technology to improve their day-to-day operations, whether it is collection management software systems for cataloging and tracking historical artifacts, using podcasts to enhance the exhibit experience, or using computer simulations as part of educational programs.

As we near the second decade of the twenty-first century, HNSA is in a strong position. The Association continues to attract talented people from various backgrounds and nationalities all united with the common goal of preserving the naval heritage of its membership. HNSA will continue to be faithful to the ideals of its founding fathers, but will adapt to modern methods and technology to ensure the continued vitality of the Association.

For further information on the Historic Naval Ships Association visit the HNSA website at: www.hnsa.org or contact the Association office in Smithfield, V.A., at Ph: (757) 356-9422, or by email at hnsa01@aol.com.

Maritime Museum of San Diego vessels *Medea* **and** *Pilot* **are also among the HNSA designees.** *Medea* **served in two world wars, under three navies and six national flags. In World War II,** *Pilot* **was taken over for military use, serving both as a patrol boat and carrying civilian pilots out to ships.**

Photo by Randy McLauchlan, MMSD



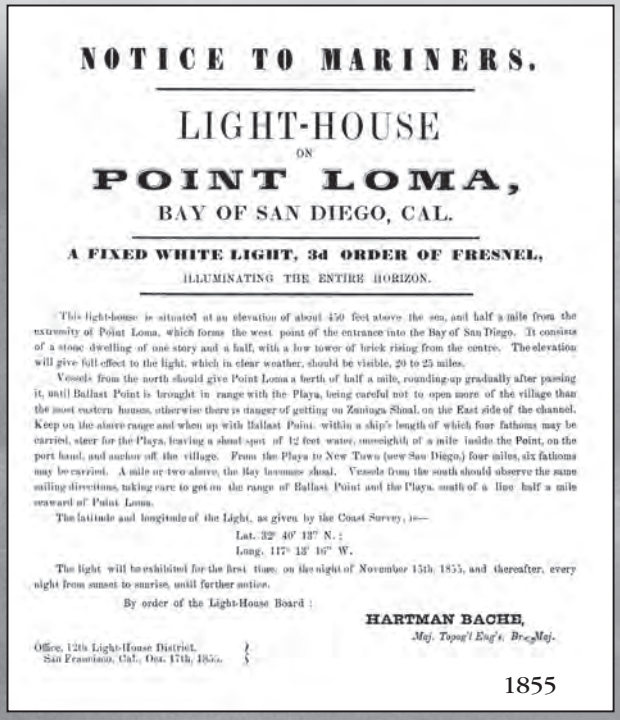
American Lighthouse Coordinating Committee

By Joe Cocking with the assistance of Kim Fahlen



Fresnel's great talent was not just in developing new theories and a new understanding of light and its diffraction, refraction, and reflection, but also in his abilities to create practical experiments to prove his theories. In the case of his lighthouse work, he was able to create usable designs that not only performed the required function, but which could easily be manufactured and implemented.

—Thomas A. Tag, Historian



NOTICE TO MARINERS.

LIGHT-HOUSE
ON
POINT LOMA,
BAY OF SAN DIEGO, CAL.

A FIXED WHITE LIGHT, 3d ORDER OF FRESNEL,
ILLUMINATING THE ENTIRE HORIZON.

This light-house is situated at an elevation of about 450 feet above the sea, and half a mile from the extremity of Point Loma, which forms the west point of the entrance into the Bay of San Diego. It consists of a stone dwelling of one story and a half, with a low tower of brick rising from the centre. The elevation will give full effect to the light, which in clear weather, should be visible, 20 to 25 miles.

Vessels from the north should give Point Loma a berth of half a mile, rounding up gradually after passing it, until Ballast Point is brought in range with the Playa, being careful not to open more of the village than the most eastern houses, otherwise there is danger of getting on Zuniga Shoal, on the East side of the channel. Keep on the above range and when up with Ballast Point, within a ship's length of which four fathoms may be carried, steer for the Playa, leaving a shoal spot of 12 feet water, one-eighth of a mile inside the Point, on the port hand, and anchor off the village. From the Playa to New Town (new San Diego,) four miles, six fathoms may be carried. A mile or two above, the Bay becomes shoal. Vessels from the south should observe the same sailing directions, taking care to get on the range of Ballast Point and the Playa, south of a line half a mile seaward of Point Loma.

The latitude and longitude of the Light, as given by the Coast Survey, is—

Lat. 32° 40' 13" N.;
Long. 117° 13' 16" W.

The light will be exhibited for the first time, on the night of November 15th, 1855, and thereafter, every night from sunset to sunrise, until further notice.

By order of the Light-House Board:

HARTMAN BACHE,
Maj. Topog'l Eng'rs, Bv. Lt.-Col.

Office, 12th Light-House District,
San Francisco, Cal., Oct. 17th, 1855.

1855

Left: Old Point Loma Lighthouse
Photo by Kim Fahlen

Left: *Lighthouses of San Diego,* **by Kim Fahlen and Karen Scanlon, is available online, at local bookstores, or from Arcadia Publishing.**



What French physicist Augustin Fresnel began in the early 1800s has evolved into a priceless artifact to be protected and preserved two hundred years later. The classical Fresnel lighthouse lens and its future was a major topic within the Seventh National Lighthouse Preservation Conference radiating from the Eighth Maritime Heritage Conference. Fewer and fewer Fresnel lenses continue to broadcast beams to the mariner along America's waterways. Automation brought the de-manning of light stations – dictated by economics – and with automation came the loss of daily attention to the lenses.

When lighthouse lenses were removed from their lanterns in the early days of automation, little regard beyond disassembly, crating, and storing was given them (in some cases, even less, as they were discarded). Then the U.S. Coast Guard began "loaning" lenses to museums, and ultimately, to volunteer organizations that have undertaken their care.

With every lighthouse, its own singular issues call for varying responses, but a lens is best kept in its tower until clear justification mandates its removal, as was the case with the third order rotating optic from within San Diego's Point Loma Lighthouse. Condition of the ironwork of the skeletal tower placed a threatening tension on the lens.

Today, thankfully, the historic value of lighthouse illuminating apparatuses is well recognized and efforts to save them are ongoing. Major and minor museums in the United States and Europe are cognizant of their merit, historically, as well as for their engineering and beauty. As with any significant artifact, the adoption of standard museum practices is paramount to the success of preserving the unique Fresnel lens for future generations – its contribution to science, industry, functionality and art are without parallel.

Above: In first-rate guardianship, Cabrillo National Monument put forward complete conservation of the lens it displays in the Old Point Loma Lighthouse. Broken prisms were mended, "shell" fractures secured, cracked putty was replaced and missing putty added. Through the lantern window with San Diego reflected across his shirt, Joe Cocking, of the Lighthouse Lamp Shop, buffs a sharp jag on a prism edge.

Photo by Kim Fahlen.



Above: The first step in any lighthouse lens conservation project is to document the condition of every element of the optic. Nicholas Johnston prepares the condition assessment of this fourth order lens. Manufactured by MacBeth-Evans, it is one of the few U.S. manufactured optics.

Photo by Joe Cocking

Care and Maintenance

Proper care and maintenance are important with regard to the continued protection of a lens: examination processes were discussed at the maritime conference, as well as materials used for the day-to-day maintenance tasks. Proper performance of a visual and first-contact examination was briefly explained, as well as the hazards that can occur if caution is not exercised during the process. Further consideration must be given to the environment in which the lens stands, and what may be affecting the stability of the various lens elements, either naturally, or by human intervention. Materials and techniques used for cleaning the lens may be a contributing factor in the deterioration of the elements that comprise the entire apparatus – what may not harm one element can adversely affect another.

- When working on or around a lens it is important to be conscious of the nature of the lens – covering hard objects on clothing, such as buttons, snaps, belt buckles, and removing watches, rings, necklaces, keys worn on a belt, or tools in the pocket will decrease the possibility of damage to prism edges.
- The use of polishes to give a shiny luster to copper alloy elements of the lens makes them beautiful, however, most metal polishes are abrasive and contain ammonia. In past efforts to obtain the shiny appearance, polishes have actually removed metal layers and, in some cases, sadly, have destroyed the builder's identification marks. Polish that has not been cleaned from hard-to-reach and inconspicuous areas contributes to corrosive processes by trapping moisture. Polish that remains causes a surface film called "adsorption." When in contact with moisture, polish residue is activated and continues to degrade the metal elements. In addition to affecting the metal elements, polish introduced into the putty will migrate into joints and into areas with damage.



Left: When putty is missing (note the space between the frame and prism in center), it destabilizes the glass elements. In the dioptric focusing rings, or "bulls-eye" sections, catastrophic damage can result, as there is only one thin seam of putty between them; the backside of these sections is flat.

Photo by Joe Cocking.

- Glass elements that comprise a lens are either linear or annular, the latter is of special concern. Most annular, or bulls-eye panels are made from glass rings of varying sizes that are, generally, tapered and pressed-fit together. A layer of putty applied between each section assists in stabilization of the panel as a whole. The back of the glass panel of rings is smooth, while the front has the familiar triangular prism shape. There is always concern that over-intense cleaning or pressure on the backside will dislodge the panel of rings, causing damage or total destruction, which has happened. Some lens panels are not tapered and have only putty between the rings. These glass ring elements can be dislodged from either front or back.



In this close view, note the wooden wedge, which along with putty, is intended to secure a prism into its exact placement within the whole. Considering the age of lighthouse lenses, and the everyday activity that once surrounded them, it is common enough to find chipped and broken prism edges.
Photo by Nick Johnston.

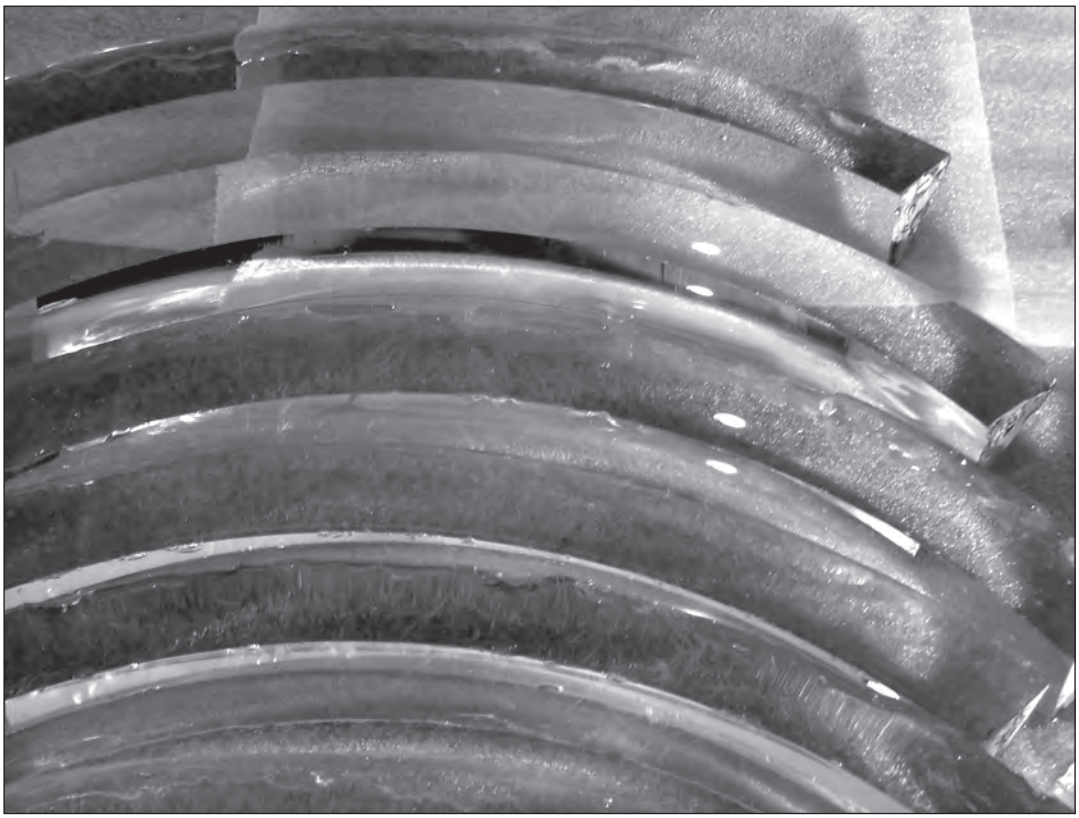
- Glass elements of a lens are made of silica, soda, and lime, and are very stable and thought to be nearly indestructible. Yet the simple use of water over time will leach the alkali from the element. An example of this is glassware, regularly washed in a dishwasher, becomes cloudy over time. This is due to the alkali leaching and the glass destabilizing. The same is true for glass lens elements – if continually wet-cleaned, an eventual destabilization will become apparent and, currently, there are no treatments to reverse or stabilize this process.
- Controversy exists as to how much, if at all, sunlight discolors glass. Varying components of the glass make it have slight coloration, such as a greenish hue, though it is not the result of aging or sunlight. In today's unmanned lighthouses, lenses usually stand in their towers without protective or dust covering and without shades lowered in their lanterns. When a lens prism intensifies sunlight, anything inflammable is at risk. In the days of oil or kerosene lamps, the heat could be great enough to reignite the source.
- It is suggested that glass is always in a liquid state and that it sags over time, but this is not so. In historic structures, glass that is removed is marked for correct positioning during reassembly. In the early glass manufacturing techniques, glass was blown into great large tubes and laid on their side, sliced, and made to lay flat. There was no uniformity within the process to control the thickness, until the twentieth century when Pilkington Glass Company invented the float glass process still used today.
- Putties used since the Middle Ages, and those applied to lighthouse lenses in the eighteenth and nineteenth centuries, contain lead which was discovered in the twentieth century to be hazardous to humans. The basic ingredients in a putty compound are calcium carbonate, which is used as a bulking agent, boiled linseed oil serves as the vehicle, and lead compound for use as a drying agent (carbonated white lead, litharge or red lead). As straightforward as the repair or replacement of putty in a lighthouse lens may seem, the process and selection of



Final activity within Cabrillo National Monument's conservation of its third order lens in Old Point Loma Lighthouse includes the cleaning of the lens frame (Kim Fahlen). In the tedious process of applying putty into the tight spaces between glass and bronze, putty can easily make its way to where it is unwanted.
Photo by Joe Cocking.

materials is critical in order to prevent damage to other elements. Do-it-yourself or home centers offer products that work well for replacing window putty and for sealants, but these off-the-shelf products have proprietary ingredients that can have a corrosive affect on the copper alloy elements of the lens.

- Silicones are not recommended when treating a lens. Many of the curing products used in its manufacture are acid curing, meaning they can etch the copper alloy and introduce a corrosive. Removal of silicone is very labor intensive as it is accomplished by hand. There are some chemicals that can swell silicone, but will not completely dissolve it.
- How do you clean a lens? The best way to keep the lens clean is to simply keep it dusted using lint-free cloths and by careful vacuuming. Use of a Hepa vacuum or one with a Hepa-brand filter is encouraged to prevent distribution of particulate throughout the facility. A small vacuum cleaner that is worn like a backpack, or one that straps around the waist (a "hip-vac") is convenient and lightweight and allows safer operation when cleaning a lighthouse lens. A slow careful passage of the vacuum tool is essential to avoid contact with the prisms.
- When treating a lens, the materials and techniques used by a professional are carefully considered prior to beginning every process—the cause and affect of what is performed has a direct bearing on the stability and longevity of the object. Often, it is found that previous treatments or modifications have been applied, which must be addressed prior to proceeding with the current processes. As with any task performed on a historic artifact, the personnel are the biggest assets, but if not properly trained, can be the biggest liabilities. When in doubt, consult a professional whose knowledge of materials and techniques provide guidance for preventing unnecessary actions and accidents.



These prisms belong to the fourth order Ship Island lens that was displayed in the Maritime and Seafood Industry Museum, Biloxi, Mississippi, before Hurricane Katrina destroyed them both. Lighthouse Lamp Shop is making amazing progress on the conservation of the lens frame and its glass elements. Broken prisms were bonded and, though it's hard to see in the photograph, prisms edges were actually reformed.

Photo by Joe Cocking

Disaster Response and Recovery

Disaster response and recovery refer to people coming to aid a site that has experienced a calamity. Several issues surround this topic.

Every museum or site should develop a disaster plan that encompasses acts of nature, as well as accidents both personal and material, such as fire, water damage, or vandalism.

Should a disaster occur to your site for which assistance is required, certain matters must be addressed prior to a volunteer force being allowed on site. Although the help is much wanted and needed important questions need to be answered first. Are the site manager and helpers aware of health issues, basic living necessities, insurance and physical fitness requirements? Do the people coming in have any training in the recovery of cultural artifacts? Thanks to recovery and conservation efforts in the past, delicate pieces have been saved due to the efforts of trained conservators. This was clearly brought to light in the wake of Hurricane Katrina with a nationwide call for professional conservators to rescue the cultural heritage of the Gulf States. Because of this, a grant was awarded to the Institute of Museum and Library Services (IMLS) who partnered with the American Institute for Conservation of Historic and Artistic Works (AIC) in establishing a Collections Emergency Response Team (CERT). Sixty professionals were accepted into the program, making a commitment to assist others in the event of a disaster. It was compulsory for each volunteer to complete the minimum requirement of the "Incident Command System 100" course in order to become familiar with working in an organized system under less-than-ideal circumstances. Three classes were held in locations throughout the country, composed of twenty individuals with varying specialties, for a one-week training period. Both classroom and field exercises were conducted.

Persons involved in the CERT program are registered with AIC and can be contacted through Mr. Eric Pourchot at (202) 452-9545, ext 5.

San Diego Ancient Mariners Sailing Society: A Living Museum from the Golden

By Deb Dominici, Dave Easter (Commodore) and Jerry Newton – AMSS Board Members



of Vessels Age of Yachting



The Ancient Mariners Sailing Society (AMSS[1]) is a fraternity of people interested in the preservation of vessels of classic design. As owners of historically relevant vessels, AMSS members understand that they serve as the temporary line stewards of true maritime treasures. As such the Ancient Mariners fleet comprises a "Living Museum" of boats in service which are well loved and cared for, and which are shown and raced together on a regular basis. Ancient Mariners flag vessels run the gamut from small classic knockabout dinghies to large, magnificent yachts originally constructed during the "Golden Age" of sail, before the Second World War.

The Ancient Mariners Sailing Society has been at the forefront of the classic yacht movement, which has obtained rapid growth and a worldwide presence and cultural following in recent decades. The AMSS was founded in 1975 as a not-for-profit 501(c)(4) corporation. Along with the Master Mariners Benevolent Association in Northern California, and many other regional organizations and clubs, the Ancient Mariners Sailing Society supports a fleet of classic vessels which are readily viewed by the public in their natural element – the Pacific Ocean and inshore waters of our West Coast. Maintained to sail rather than stand as exhibits shoreside, these museum-worthy maritime artifacts are living treasures, yet fulfilling their original purpose, often well beyond their years of expected service.

Left: During the Eighth Maritime Heritage Conference, the Ancient Mariners fleet put the vessels *Alsumar* (1934 Sparkman and Stephens yawl), *Freedom* (1938 Herreshoff Bermuda Cutter) and *Pacifica* (1947 Sparkman and Stephens yawl) on display at the museum. Visitors to the Maritime Heritage Conference were able to board these vessels, and study them at close quarters, above and below decks, as prime examples of classic Golden Age ocean-racing yachts.
Photo by Neva Sullaway, MMSD



At the 18th Annual San Diego Wooden Boat festival held at Koehler Kraft in June 2008, families built and launched their own wooden Bevins skiffs. Guided by shipwright Doug Jones (right, of Traditonal Boatworks) and his crew of boatbuilders, the event offers an opportunity to experience the satisfaction of building a seaworthy vessel in one weekend.

Photo by Neva Sullaway, MMSD

Photo by Deb Dominici, AMSS

The Maritime Museum of San Diego and the Ancient Mariners Sailing Society have been partners in the preservation of our maritime heritage in Southern California since their formation. The two organizations share a common commitment to keeping active and well-maintained sail fleets at sea on a regular basis. The Ancient Mariners join in the annual sailings of the *Star of India*, the oldest sailing ship currently able to make way on all points of sail, with her consorts: the *Californian*, HMS *Surprise* and other tall ships, providing escort vessels[2] offshore for these popular seasonal events.

AMSS Flag vessels are yachts of between forty to one hundred years old, often privately owned, and not generally sought for the collections of public maritime museums. Currently, boats qualifying as flag vessels of the AMSS are sail or power vessels of ancient vintage or classic design, not including vessels constructed of fiberglass, aluminum or concrete. Vessels of this period were designed for international or universal rule yacht racing and the larger vessels were built to compete in ocean races such as the Trans-Pacific, Fastnet and Newport-to-Bermuda series. The full scale replica of the schooner *America*, the winner of the original America's Cup in 1851, is berthed in San Diego, and is an AMSS flag vessel.

> ***Sometimes a beautiful boat is simply worthy of devotion, reverence and awe, and no one doubts it. A beautiful boat is as obviously invaluable as a Leonardo sketch or Monet's water lilies. The boat can be a magnificent structure. And the boat most likely to be deemed so is surely the wooden boat.***[3]
>
> – Michael Ruhlman

The association of the Ancient Mariners Sailing Society and the Maritime Museum of San Diego, as leading proponents of our national maritime heritage, commit to a Fund[4] sponsoring educational activities such as the Family Boat Building Event, in which individual and corporate donors support the construction of wooden Bevins skiffs (or other water craft), by enterprising and deserving young persons (and their families), with the assistance of local boatwrights and Ancient Mariner members. In 2008, this annual event took place at Koehler Kraft Boat Yard, in conjunction with the San Diego Wooden Boat Festival.

The membership of the Ancient Mariners, although a relatively small organization, includes a surprising variety of accomplished individuals. A spare and accurate description of the club's makeup was published in the monthly newsletter, the "Albatross".[5]



Olin Stephens (right), foremost yacht designer and builder of the twentieth century, was greeted by Ray Ashley onboard the Maritime Museum's *Medea,* during one of his many trips to San Diego hosted by the Ancient Mariners Sailing Society. Mr Stephens recently celebrated his 100th birthday.

Photo by Maggie Piatt-Walton, MMSD

Wood construction is desired, especially if the original was an example of fine workmanship and material…wood's characteristic of bending smoothly and fairly between support points appeals to the eye and aids performance. Not a good conductor of heat or sound, a wooden boat is quiet and isolated from the environment, and it is fragrant, which cannot be said of the plastic resins. Wood needs maintenance, but reacts beautifully to good care. In itself this creates a bond to the wood. The renewed appreciation of wood as a material for boats is easy to understand.[6]

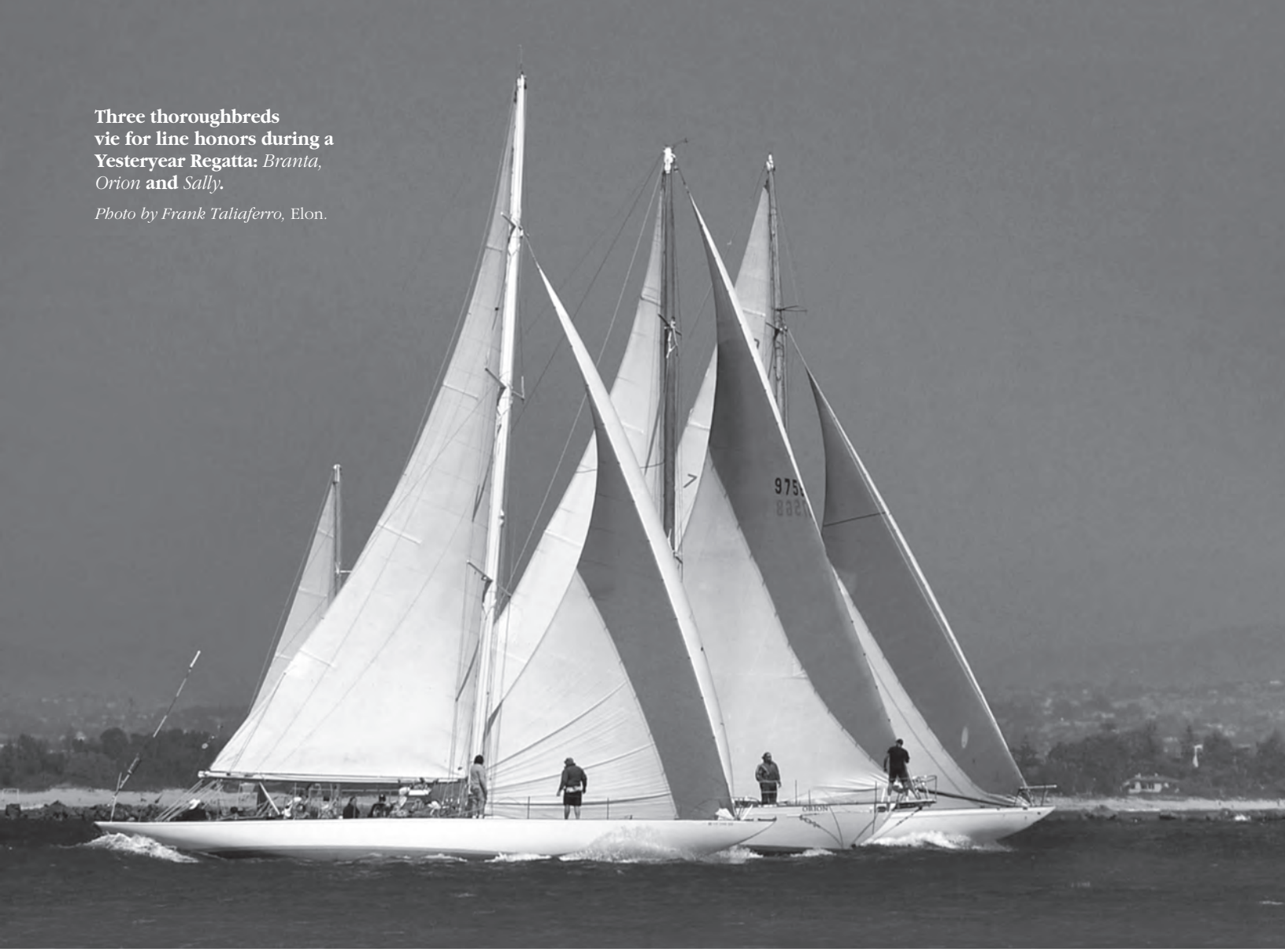
—Olin J. Stephens II

The Ancient Mariners include a wide range of those who keep our nautical traditions and sailing heritage alive, among whom are:

- Several of the most eminent American yacht designers of the 20th century
- Senior officers and directors of some of the finest maritime museums in the U.S.
- Members of the America's Cup Hall of Fame, skippers and crew
- Philanthropists who contribute to the maintenance of our nation's maritime history
- Boatwrights, artisans and craftsmen actively engaged in preserving classic boats
- Yachtsmen and women who have made their mark in caring for fabulous classic yachts
- Owners and employees of businesses that are world class leaders in yacht restoration
- Chandlers, writers, sailmakers, circumnavigators and other generally famous characters
- Publishers of internationally renown periodicals dedicated to classic yachts.

The Ancient Mariners racing programs feature a series of annual regattas in Southern California, sailing practically every month of the year. The most popular annual race is the Yesteryear Regatta, the premiere classic yacht race in which boats from all over the West Coast compete for a variety of well-known perpetual trophies. This race sails in May, and uses a staggered start with a reverse handicap format resulting in often exciting finishes at the Embarcadero, in downtown San Diego Bay (next to the Maritime Museum).

The 20 Guinea Cup Series has recently expanded to a seven-race series, with many races limited to working sails



Three thoroughbreds vie for line honors during a Yesteryear Regatta: *Branta, Orion* **and** *Sally***.**

Photo by Frank Taliaferro, Elon.

(no spinnakers, mizzen staysails or gollywobblers). This series is open to all Ancient Mariner flag vessels and their invited guests, and continues to grow in popularity. In the annual Kettenburg Regatta, honoring the local Kettenburg builders and the late Paul Kettenburg, Kettenburg PCs (the local PC fleet has been restored to nearly thirty boats), Pacific Class Cruisers (PCCs), K-38s, K-40s, K-41s, K-43s and K-50s, round out the fleet for their June Race.

Every month the Ancient Mariners hold General Meetings which are open to the public, and feature special programs and speakers of interest to classic boat admirers. At these meetings, new and experienced boat owners and local tradesman knowledgeable in the conservation, restoration and maintenance of traditional sailing craft share valuable information. At times, celebrated yacht designers, builders and racers address the group. The Maritime Museum typically hosts one or more Ancient Mariners meetings yearly with speakers such as the *Star of India's* Captain Richard Goben, or MMSD's President Ray Ashley. An annual awards ceremony and holiday party is held in December. The shore-side activities of the AMSS form the heart of our community, and bring together many who would not otherwise discover the wealth of experience, craftmanship and practical expertise which is freely shared to enable our fleet to continue sailing in good repair and condition.

Reverence for wood is indeed an undercurrent of our Ancient Mariner culture, and Thomas Moser's words are evocative: ***The longing for natural materials with which we co-evolved is welded to our DNA, and as we alienate ourselves more and more from the cottage and the cave, our yearning for the natural world grows stronger.***[7]

Or, we may consider Jonathan Wilson's view: ***There is an irresistible aura about boats and yachts built of wood, an aura brimming over with the richness of creation. It flows from the strength and grace of trees themselves, through the hands of craftsmen who fashion them into proud new forms. It is the presence not only of substance but of soul, created in a collaboration between the earth, the sea, and the artisans who fit the wood with skill and care so that it will look lovely and last long.***[8]

The Ancient Mariners are looking forward to the dedication of an exhibit on the Maritime Museum's *Berkeley*, which celebrates the partnership these two fine organizations have established in the preservation of our maritime heritage, and our conservation ethic dedicated to the maintenance of classic wooden sailing ships and yachts from the "Golden Age."

Notes

1 Ancient Mariners Sailing Society, est. 1975, California 501 (c)(4), Not-For-Profit Corporation By-Laws. P.O. Box 6484, San Diego, CA, 92166. www.amss.us

2 Ashley, Ray, Ph.D., President/CEO of MMSD; Durdaller, Peter, Maritime Museum of San Diego, MMSD Ships Operations Officer, "Star of India Sailing 2007, Program Information, Plans for the Day, Escort and Press Boats," November 10 & 11, 2007.

3 Ruhlman, Michael, *Wooden Boats,* (Penguin Group, New York, NY, 2001), pg. 11. ISBN 0-670-88812-5

4 Letter of Intent, Maritime Education Agreement between the Ancient Mariners Sailing Society and the San Diego Maritime Museum of San Diego, by the "Ancient Mariners/Maritime Museum Education Fund."

5 "Albatross," the Monthly Newsletter of the Ancient Mariners Sailing Society, "From the Helm," January, 2007, pg. 2.

6 Stephens, Olin J., *All This and Sailing Too, An Autobiography,* (Mystic Seaport Museum, Mystic, Connecticut, 1999.), pg. 267. ISBN 0-913372-89-7

7 *Thos. Moser, Artistry in Wood,* Thos. Moser with Brad Lemley, (Chronicle Books, San Francisco, CA, 2002), pg. 127. ISBN 0-8118-3611-8

8 White, Joel. *Wood, Water and Light, Classic Wooden Boats*, (W.W. Norton and Co., New York, London, 1998), from the Foreward, by Jonathan Wilson, Editor, "WoodenBoat Magazine," pg. vii. ISBN 0-393-03327-9

Ancient Mariners raft-up:
Scamp, Benchmark, Sally, Ocean Queen V, Frolic, Taroa, Pacifica, Dauntless.
Photo by Bob Greiser



An Ancient Mariner Restores his Classic Yacht *Scamp*

By Tom Jackson

Maritime Museum of San Diego and
Ancient Mariners Sailing Sailing Society member

The story of *Scamp* begins in 1958 at Stone & Sons Shipyard in Alameda, California, as Jack Ehrhorn, loftsman and shipwright, began conjuring a handy 33-foot sloop for his boss Lester Stone. Built during the after-hours and slow periods of the yard, *Scamp* was "well seasoned" by the time she was launched into San Francisco Bay in 1967.

Constructed with renowned skill by Jack, all the materials were top grade, except for Lester's insistence on using galvanized iron fasteners. By the turn of the twenty-first century, the iron embedded in her structural oak and ironwood had reacted with the seawater saturated into the wood fibers resulting in "iron sickness" throughout most of structural timbers below the waterline. This was in spite of the fact that all the fasteners and drifts had been well coated with coal tar or white lead during installation. *Scamp* had been well-cared for, first by Lester Stone, then by Jack Ehrhorn and finally by me with regular replacement of frames and planks, and experienced attention to electro-galvanic interactions, but the chemistry between the oak's tannins, the iron and seawater, was inevitable.



Jack Ehrhorn (in 1958) built *Scamp* during his spare time at Stone & Sons Shipyard in Alameda, CA.

Photo courtesy the author

There is a turning point that a caretaker of a vessel faces once the assessment has been made that her range of utility is diminishing due to her structural health. Do you keep sailing her within the shrinking confines of her limitations, or reconstruct the vessel so that the crew is the limitation rather than the vessel? *Scamp* fits into our family and future plans perfectly, so by 2003 my wife, Wyndham, and I decided to invest the effort and dollars to reconstruct her hull with new wood and non-ferrous metals, while otherwise strictly adhering to her original plans which we had on hand. After the decision to reconstruct the vessel was made, I went through the process of carefully setting a scope of work and a detailed plan. Since I was going to be personally performing a majority of the work and yet had to keep a family and business going simultaneously, a strict plan was helpful to avoid the perpetual projects and high costs so many of us have witnessed when owners approach this level of work romantically. My plan was to finish this keel-off hull reconstruction in five months, and go sailing in the spring.



C.F. Koehler backed *Scamp* (November, 2003) into his old shed on Shelter Island with only a few inches to spare. (As of 2008, the boatyard shed had been completely remodeled and now has a vaulted ceiling.)
Photo by Neva Sullaway

Summary Scope of work planned over 5 months

1 Remove/reinstall keel, deadwood. Coat iron ballast keel with Ceramcoat.
2 In general, remove all iron fasteners below waterline and replace with Monel 400.
3 Replace keel bolts (8) and add G10 tubes.
4 Install 20 new floors, and new floor bolts in all floors.
5 New frames in (25) stations.
6 New planks (17) strakes up from garboard port & starboard.
7 Install new shaft, packing and new engine mounts, trans seals, and mechanical work.
8 New water tanks.
9 All new plumbing and fresh water system.
10 Replace all electrical, including new wires and panels, etc.
11 Replace all through-hull fittings with new. All new hoses.
12 Replace all chain plate fasteners with Monel.
13 New mast step, Purple Heart & monel.
14 Replace all standing and running rigging, rebuild all winches (vintage hardware).
15 Replace all electrical wiring in mast, add new lights per regulation (use vintage hardware).
16 Repaint & varnish entire interior.
17 Repaint topsides with enamel prior to launch.

It was important to honestly assess my skill capabilities and limitations, and account for any schedule uncertainties where my plan indicated that I'd be pushing into new territory. Although I had most tools already on hand, I planned to buy specialized tools when I came across the need rather than purchase them ahead of time. As it turned out, even a large project relies mostly on the standard professional set of heavy mechanics and carpentry tools. A local boatyard with a shed (a rare commodity in Southern California), Koehler Kraft, welcomed my ambition and provided a great backdrop of support for the project. The shed allowed me to work well past midnight with decent lighting, and in the rain, in very reasonable conditions.

Before the haulout I discussed with Jack the various drifts and bolts that he had used in *Scamp's* original construction to supplement what was shown on his original drawings. I then purchased the various diameters of monel rod in the next size up (3/8" for floor-to-frame and bulkheads, ¾" for floor-to-keel, keel to stem, etc. and drifts, and 1" for ballast keel bolts). In order to avoid long delays during the project, I machined all seven hundred and sixty of these monel studs to length and threaded them well beforehand, and purchased the monel nuts and washers for each end. Additionally, I purchased large quantities of heavy dimension Purple Heart wood for the structural timbers, and five-quarter mahogany for the planking. I protected the interior with heavy coverings and cut out door-skin panels to fit the decks so that the heavy work and traffic wouldn't destroy any part of the vessel I didn't intend to be working on.

Having the materials on-site, and a written plan in place allowed me to know what needed to be done each day before I showed up and kept the job on track. This helped avoid the wasted time of wondering where to start each day, or feeling intimidated by not knowing what to do next.

The first day *Scamp* was hauled out in November 2003, I removed the propeller & shaft, the rudder and steering gear, drove out the keel bolts and cut away the drifts holding the deadwood to the keel and stern post aft of the ballast keel. Koehler then lifted the hull off the ballast keel and we rolled her into the shop. The 7,000-pound keel was sent out for sandblasting and ceramic coating.

Once secured in the shop, cutting out every other plank from both sides of the hull re-created a system of ribbands onto which I could form the new replacement frames. This allows the hull shape to be duplicated exactly by using the hull itself as the pattern. This simplicity is only achievable if this work is taken on before the hull "hogs" or loses its shape due to age. After the new Purple Heart laminated 1-3/4" x 1-3/4" frames were installed along with the new 3-1/2" x 12" Purple Heart floor timbers, I transferred the location of each of the old planks' (now ribbands) seams onto the new frames, then the rest of the planking/ribbands were cut away. This allowed me to rapidly duplicate the original planking pattern without needing to save the actual planks. With the planks still off, it was quick work to install the new tanks, electrical wiring and other mechanical systems in the boat, along with the new mast step and chain plates. The planks were tight-seamed with epoxy encapsulation, bonded to the frames and mechanically screwed with #16 silicon bronze wood screws. The fairing of the hull was rewarding work, and Wyndham and I painted the topsides with enamel before *Scamp* went back out into the yard.

The ballast keel had been sandblasted and coated with a ceramic coating followed by epoxy primer. Re-attaching the boat to the ballast keel required careful alignment with the crane while the hull hovered over the keel on the cradle in the yard. Finally, the last keel bolt was secured, the rudder was in place and the mast was stepped. Five months after she'd left the water, on a blustery day in April 2004, we re-launched *Scamp* back into the Pacific amidst the well wishes of family and friends.



Above: The planks were tight-seamed with epoxy encapsulation, bonded to the frames and mechanically screwed with #16 silicon bronze wood screws.

Photos courtesy of the author

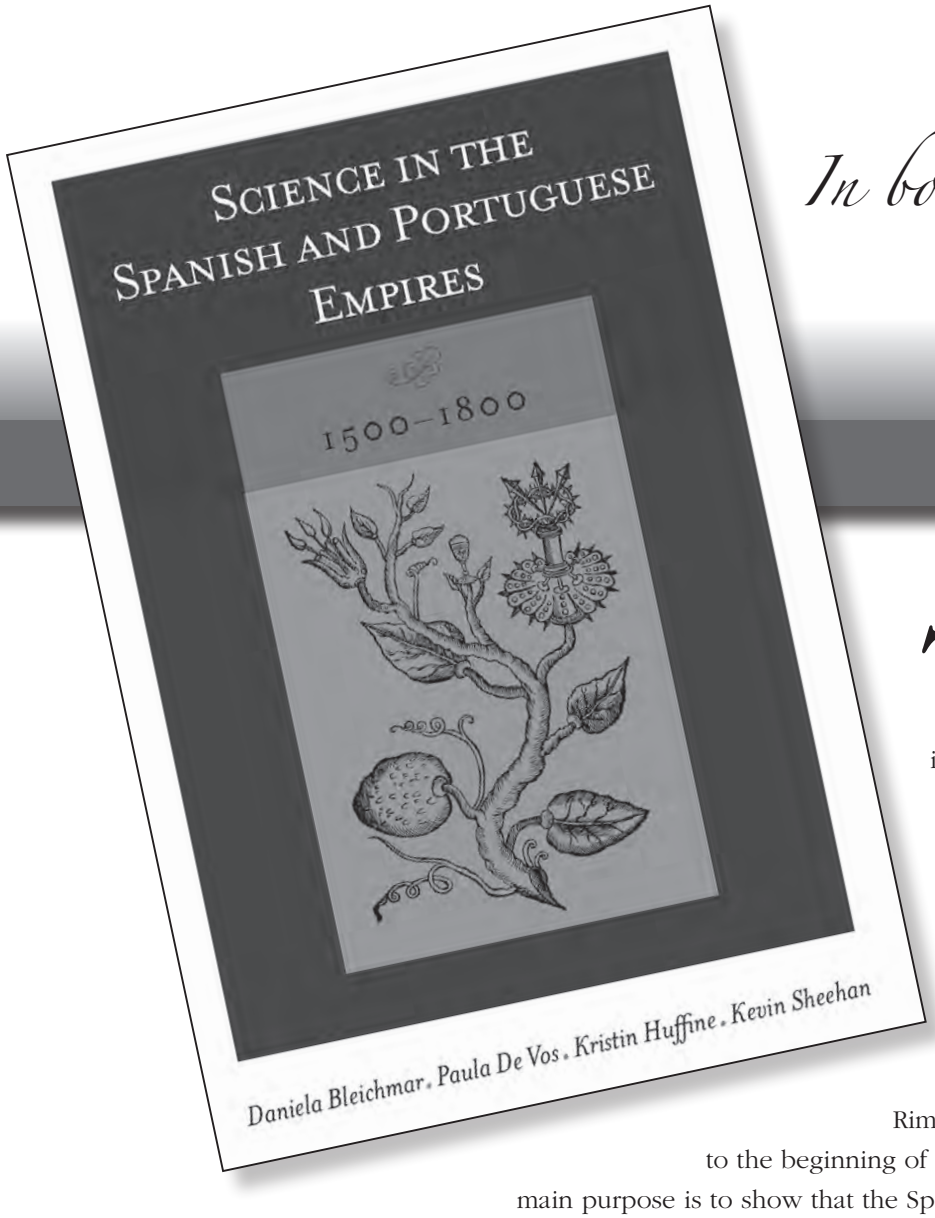


Right: Re-attaching the boat to the ballast keel required careful alignment with the crane, while the hull hovered over the keel on the cradle in the yard.

Below: Tom and *Scamp* underway again

A thing of beauty is a joy for ever:
Its loveliness increases;
it will never Pass into nothingness…

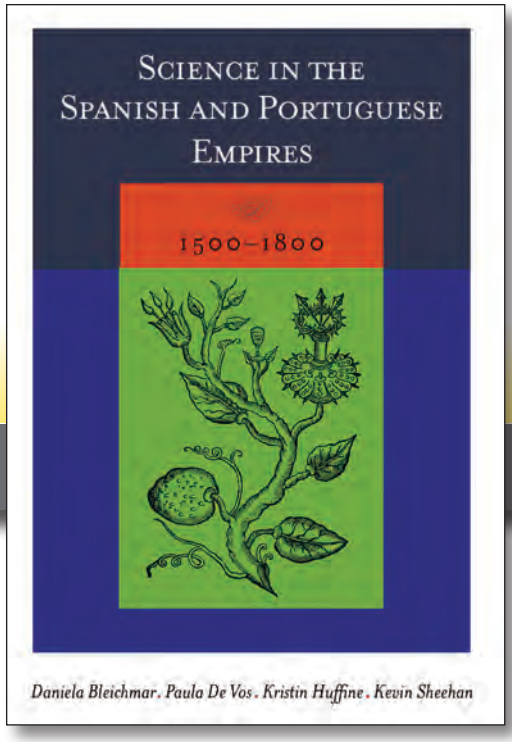
— John Keats*, Endymion:*
A Poetic Romance; from Book 1



In bookstores November 2008

The edited volume, *Science in the Spanish and Portuguese Empires, 1500-1800,* is due in bookstores in November 2008. This book represents the first English-language anthology of essays by multiple authors devoted exclusively to the practice of science in the Spanish and Portuguese Empires. The collection covers a wide geographic and chronological range, from Iberia to Latin America to Asia and the Pacific Rim, and from the end of the fifteenth to the beginning of the nineteenth centuries. The book's main purpose is to show that the Spanish and Portuguese empires were active participants in the practices of science during the early modern period. In this way, it provides a much needed study of the Spanish and Portuguese contributions to the Scientific Revolution in Europe and abroad, a topic about which very little has been published in English, despite its importance for anyone interested in understanding the role of science in the establishment and maintenance of the Portuguese and Spanish maritime and territorial empires.

This book gathers original contributions from senior scholars, many of whom have produced key works in their field, and younger scholars, whose work illustrates the new directions in which this type of research is moving. The group is interdisciplinary, including authors from the fields of history, history of science, art history, and literature; it is also international, bringing together scholars based in the United States, Europe, and Latin America. One of the volume's co-editors, Kevin Sheehan, librarian and archivist at the MMSD, also authored an article in this collection, and presented portions of his research at the Eighth Maritime Heritage Conference.



2009 Preview

As Juan Rodríguez Cabrillo's *San Salvador* approaches our shores history will re-create the ship.



San Salvador **as rendered by Melbourne Smith.**



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