Melita Westerlund works on a large aluminum sculpture at her cavernous Bar Harbor studio, a 19th century brick warehouse that was once an electric power plant.

Metal Magic

Melita Westerlund gives shape to fantastic visions

BY LAURIE SCHREIBER

STOP BY BAR HARBOR ARTIST Melita Westerlund's warehouse studio and you will find her wearing industrial protective gear and wielding industrial power tools. The final results of her work are far from industrial, though.

Westerlund's bright abstract sculptures in aluminum, steel, bronze, and stone, occasionally combined with woodwork, range in style from voluptuous to precisely linear, and in size from tabletop pieces to room-sized public commissions and kinetic works for indoor and outdoor sites. She periodically shifts gears to create hand-cast paper or three-dimensional fiber art pulped and dyed to work like clay. Her motifs are reminiscent, in turn, of Henri Matisse's paper cutouts, Alberto Giacometti's attenuated sculptures, and African tribal masks—bursts of color and celebrations of free-flowing forms.

(Left) Photo by Laurie Schreiber (Right) Photos by Stewart Brecher (2)

Born and raised in Finland, Westerlund has an affinity for bright colors. This is *Early Spring*, 2013, aluminum and paint, 4' x 2'6" x 12'.

When she creates one of her signature aluminum sculptures she gears up in steel-toed boots, canvas jacket and pants, leather gloves, and a welder's helmet and ear protectors layered over a knitted Lapp cap whose patterns reflect her native Finnish love of color. And she wields a powered metal saw that can screech through thick aluminum sheets.

As piles of metal filings accumulate on the floor, she cuts sinuous shapes—like petals, or folds of flesh, or giant mushrooms. Recently she was working on a six-foot sculpture.

"There's something about the tension in physical involvement," she said. "I like struggling with the elements, struggling to hold different things together."

Strategically flexed, hole-punched, bolted, and painted in "park green" and "ocean blue," the work manifested Westerlund's twin drives to struggle with the elements of sculpture and transform them organically into bold constructions that are surprising and playful—"a little bit crazy and a little bit passionate," she said.

"There's something about the tension in physical involvement," she said. "I like struggling with the elements, struggling to hold different things together."

For more than two decades, Westerlund has worked in a studio in an enormous 19th century brick warehouse that was once an electric power plant. The cavernous space is packed wall-to-ceiling with hand tools, power equipment, raw sheets of metal, palettes of fiber, buckets of dye, paints, finishes, come-alongs, welding masks, fire extinguishers, clamps, fastenings, stacks of lumber, and artwork in various stages of completion.

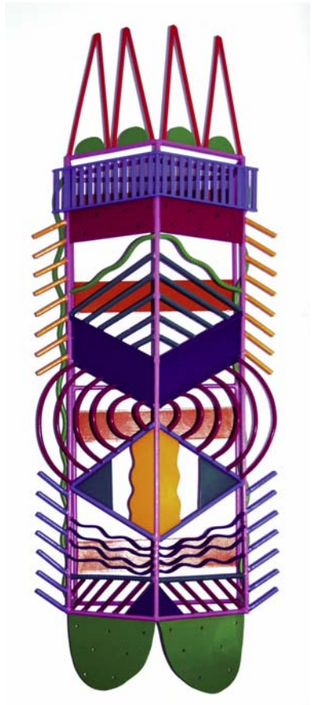
One of her favorite tools is a plasma cutter.

"It burns into steel and creates these very linear forms," she said. "It's like drawing in steel."

Westerlund's sensibility is rooted in the traditional arts of her native Finland and extended stays in Kenya. But her lively repertoire is muscular, a take-no-prisoners approach that molds materials to a fantastical vision.

Born and raised in Helsinki, Finland, she grew up with an

Westerlund's work ranges in size from small table-top pieces to large works meant for outdoor display. This is *How Oceans Evolve*, aluminum, 2014, 80" x 47" x 47".



Mask, steel, paint, 1988, 69" x 25" x 13" was inspired by African tribal masks. Westerlund lived in Kenya for three years.

affinity for bright colors, an antidote to the country's long, dark winters. As a child, she began to feel that art had special meaning for her, as she discovered art with her sister, also an artist.

"I remember going to museums with her, in Helsinki, when we were maybe 14 years old, and discovering these amazing Finnish artists. At the time, we didn't know much about American art until the art magazines started to come from

Westerlund's sensibility is rooted in the traditional arts of her native Finland and extended stays in Kenya.

America to Europe. That opened up the doors to influence from outside art."

They were particularly attracted to the subjective emotionalism and experimentation of early-twentieth-century French expressionism. But one of their most powerful influences was their mother, who is now in her 90s and lives in Helsinki.

"She was a stay-at-home mom for a long time, but she could have been a really wonderful artist if she had grown up in a different period," said Westerlund. "She grew up during the war and didn't have the opportunity to do anything nontraditional. But she was very creative in sewing and knitting and making things for the home. She has an amazing sense of color and design."

Westerlund traveled to Tunisia to study painting and drawing at L'Ecole Des Beaux Arts, then returned to Helsinki to attend the Free Art School. Eventually, she and a friend, deciding it was time to study elsewhere, hitchhiked to Barcelona. It was the early 1970s and they were teens, happy to crash in an apartment belonging to the parents of a new friend and to accept canvas and paints from another new friend. When they ran out of money, they returned to Helsinki, where Westerlund enrolled in the University of Arts and Design to study design.

Figurative studies, as opposed to abstract studies, was the only option at the time.

Photos by Stewart Brecher (2)

A recent series created from recycled fibers was motivated by the increasingly fragile state of the world's coral reefs. This is *Koralli Saari (Red Coral)*, cotton fiber, mesh 2010, 30" x 30" x 15".

"We worked a lot in plaster and clay and wax, working with form and proportions," she said. "That was the traditional way of getting involved with sculpture—understanding the human body."

With a foundation in technique and materials, she began finding her own vision. She met Stewart Brecher when he came to Finland to explore the country's architecture, moved to London to live with him, and eventually the two were married. They celebrated their 42nd wedding anniversary in 2016.

When Brecher received an appointment to teach at the University of Nairobi, the family, by then including a baby, moved from London to Kenya. Over the next three years Westerlund's art blossomed, inspired by lively colors and forms of the country's traditional batik art. Her first show there featured large wall hangings that presaged her future work and led to her first commission, a lobby mural at the National Bank of Kenya.

When the family moved to New York, Westerlund earned an MFA in Sculpture from SUNY Buffalo. In 1982, they settled in Bar Harbor, where Brecher works as an architect. Westerlund has been working nonstop since then, exhibiting in museums and galleries in New England, New York, Finland, and Kenya, and completing 16 public commissions in schools around the state under the Maine Arts Commission's Percent for Art program. She has studios both in Bar Harbor and Finland, where she travels every summer to visit family.

Westerlund considers her creativity a work in progress. She lets loose with organic expressions of her inner self that are as much of a discovery for herself as they will be for viewers.

"You just play around," she said. "And this playfulness will become something worth pursuing or developing. You discover the right material that can become the expression for your thoughts. When you start, it's all unknown. But as you work on it, your mind is constantly involved, and the work evolves naturally—'Oh, of course! This is how it should be done!'"

Laurie Schreiber has written for newspapers and magazines on the coast of Maine for more than 25 years.

For More Information:
Westerlund is represented in Maine by June LaComb Sculpture, and in Helsinki, Finland by Pirkko-Liisa Topelius Gallery.

Home Afloat

Living aboard year-round in Maine means adventure

BY LAURIE SCHREIBER

WHEN JEFF AUMULLER sold his business nearly 40 years ago, he moved onto an old wooden cutter in Portland and has been living aboard ever since.

Aumuller, an accomplished blue-water sailor and musician, spends summers at his mooring in the harbor and winters tied up to a dock. Mornings usually find him down below, composing songs or practicing covers for hours. When it's cold, he lights his small woodstove, which handily warms the cozy interior. Afternoons, he'll do routine maintenance on his boat or head to town. Evenings, he's often got a gig with his band, the Potato Pickers, at one of Portland's many bars, or sometimes farther afield.

Living year-round on a boat isn't new: Plenty of people cruise the Eastern Seaboard, trading summers in the north for winters in the south. But while spending winter, as well as summer, on the water in Maine remains unusual, growing numbers of people are discovering the advantages and joy of making a boat their year-round residence.

On a Facebook page called "Maine Liveaboards," one commenter guessed that there might be a hundred liveaboards in Maine. In greater Portland, DiMillo's Marina and South Port Marine remain open in the winter; there are about two dozen liveaboard compatriots at the former, and perhaps half a dozen at the latter. Other docks might get one or two individuals, such as Aumuller, tying up for the winter. Aumuller berths at The Maine Wharf, near the Portland Science Center. There's also a small community of liveaboards in Belfast.

"Living on land, I couldn't afford to have a waterfront view. Living on land, I was always renting, throwing money out the window, never having anything to show for it."

Living aboard a boat doesn't mean boaters are stuck. They can hop into shoreside vehicles and drive to work, or walk into town to enjoy restaurants and nightlife. The bonus is that they can cast off whenever they want and head to other ports for a visit, start that year-long cruise they've been planning, or simply enjoy a night under the stars before heading back to their slip.

Living accommodations vary greatly. Aumuller, now 76, is content with *Grebe*, his 40-foot Colin Archer-designed Norwegian pilot boat, built in 1933. He is not one for fine finishes or fancy amenities. His Jotul woodstove, two-burner cookstove, and guitar and banjo make him happy. On the other end of the spectrum is Captain Ray Card's 1977 Marine Trader motoryacht, *Camelot*. Card is another long-timer, berthed since 1991 at DiMillo's, where he owns a small fleet of boats, manages and runs more boats for a client, and also plays music, gigging with his band Captain Ray and the Castaways. *Camelot* is more like a traditional home with modern comforts. The salon and galley have windows all around, getting plenty of daylight, a boon in the cold winter months. There's room to spread out, set up a TV and computer. He has lamps and knickknacks.

Liveaboards are generally lifelong boaters who choose boats, rather than shoreside houses, as their prime real estate investment for many reasons. They can tie up in one spot for any amount of time, work for a shoreside employer, throw off the lines when they choose, and wake each morning to a million-dollar view.

The No. 1 question they are asked, of course, is how they stay warm in the winter. It's a matter of preparation. Aumuller orders a couple of cords of oak firewood that's dropped at the dock where he ties up, and which gets him through the winter. Card stays warm with high-efficiency, thermostatically controlled Monitor heaters and plugs into electricity at the dock; two heat lamps on his water tank thermostats keep them from freezing in the winter.

While some might think this lifestyle is cheaper, think again. Between slip rental, boat maintenance, perhaps a mortgage on the boat, and utility bills for those living at marinas, some liveaboards estimate their costs are close to an apartment rental.

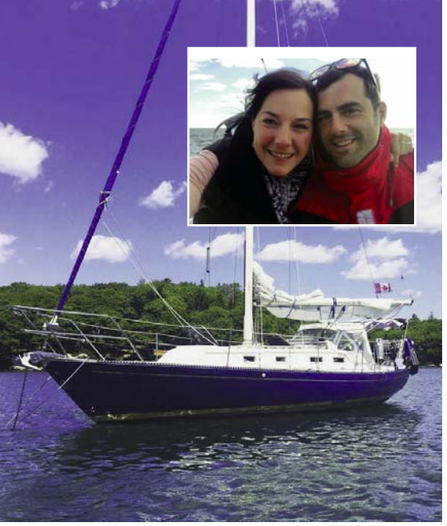
Photo by Laurie Schreiber

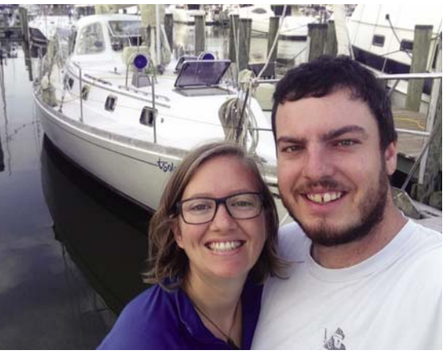
Capt. Ray Card's *Camelot* is berthed at DiMillo's, in Portland, for the winter. The marina is one of the few that allows people to live aboard year-round.

(Left) The liveaboard lifestyle allows for many of the comforts of home, including a pet cat. (Right) Long-time liveaboard Jeff Aumuller is content with his rustic quarters.

Photos (left to right) by: Emily Qualey, Laurie Schreiber, Emily Qualey, Leah Kruger

(Left) Ray Card lives year-round on his 1977 Marine Trader motoryacht. (Right) Leah Kruger and Jonathan Tetro decorated the bow of their boat for the holidays.





[TOP LEFT WITH INSET] Leah Kruger and Jonathan Tetro have been sailing their Nor'West 33 sailboat, *Brio*, for five years, settling in for the past winter in Portland.

[BOTTOM LEFT] Skye Waterson and Matt Garand have been spending the year aboard their boat *Polynya*, in Portland.

Husband and wife Matt Garand and Skye Waterson live aboard *Polynya*, a 1977 Gulfstar 50. Both are lifelong sailors, Maine Maritime Academy alums, and professional mariners who have worked in the Gulf of Mexico's oil and gas fields. Garand currently splits his year between Portland and Philadelphia, where he drives a tugboat. Waterson works at Hamilton Marine in Portland. When they married, they knew they would want to do long cruises, so purchasing a boat rather than a house was the right investment. They moved onto *Polynya* in September 2015, tying up at South Port Marine.

One of the first things Garand did was install a robust Olympia OL-60 heating system that runs, via four self-regulating thermostats, off diesel fuel plumbed from the boat's 100-gallon main tank. The system burns about one gallon per day under normal winter conditions, and nearly two gallons per day during rare days of extreme chill. On his blog, "A Life Aboard," Garand reported toasty success.

"The unit fires up quickly and begins circulating hot water to the radiators within moments," he wrote. "Since the radiators utilize 12V fans to distribute heat, the air in the cabin warms quickly. With our four different zones we are able to heat each space to different temperatures when necessary. This is handy, for example, in the forward cabin, which we keep at 50 degrees when not in use to reduce fuel consumption. The engine room is also a separate zone, which I have set to 50 degrees to prevent plumbing from freezing."

Leah Kruger and her husband Jonathan Tetro also grew up sailing. As a child, Kruger lived on a sailboat for seven years and circumnavigated with her family. The couple bought a Nor'West 33 sailboat, *Brio*, in Mexico five years ago, cruised along Central America, through the Panama Canal, around the Caribbean, then on up the East Coast to Maine, where Tetro grew up. Now they're docked at DiMillo's. On weekdays, Kruger heads to Idexx Laboratories, the animal health products company in Westbrook, where she works as an instructional designer. Tetro is an independent contractor.

Last year was the couple's first winter in Maine, and was "definitely interesting," said Kruger. "To be honest, I was really afraid. But it's its own kind of adventure."

Having cruised in the tropics, the boat wasn't set up for a Maine winter. They insulated from the waterline up with high-density foam, and heat primarily with an oil-filled electric radiator. For supplemental heat on really frigid days, they also installed a Newport Dickinson diesel heater that runs off the main tank, using about one gallon every six hours. Everything worked well last winter.

Like many winter liveaboards, these two couples create a tent of clear shrink-wrap above decks. Tetro built a tall space with a 40-foot by 40-foot plastic sheet that's supported by the boom and four lengths of PVC pipe bent into arches. He built a full-size door into the tent, which can heat up to 80 or 90 degrees on sunny, single-digit winter days.

"It's awesome because the shrink-wrap triples our living space," Kruger said. "We can sit outside on a sunny day and be completely safe and warm. And we have more storage space."

Winter does have particular difficulties, chief being water access when a marina shuts off the dock spigots. DiMillo's keeps one spigot open at the head of the dock, so Kruger and Tetro run a 200-foot length of hose to their tank. They and others also use the marina's shower/laundry facilities. The marinas keep the docks clear of snow, but freezing sea spray can be a problem. Garand and Waterson wear flotation and ice cleats when they leave *Polynya* during stormy weather.

Liveaboards must follow certain rules and regulations. DiMillo's Marina, for example, requires that boats be operational.

"You have to show you're not living in a floating wreck; you're actually on a boat that you use as a boat and not just as a house," said Kruger. "But it's still a pretty open lifestyle, without a ton of rules, which is part of the appeal."

Sitting with Card on *Camelot*, it's evident what makes this a lovely life. Although the city and its attractions are just at his back door, there's a quietness on the boat—the faint shushing of the breeze, the cry of gulls. The sun streams down, the harbor beyond beckons.

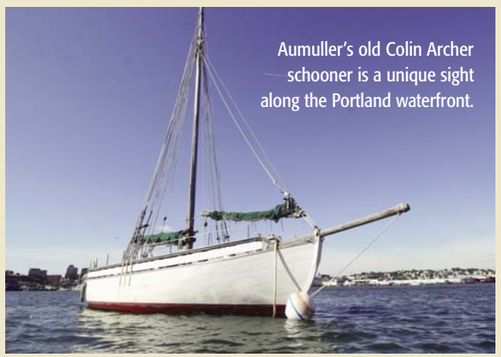
"That's why I'm here," Card said. "Living on land, I couldn't afford to have a waterfront view. Living on land, I was always renting, throwing money out the window, never having anything to show for it. Living on land, I couldn't get up in the morning and drive my apartment to another location. I never got seasick when I was living on land, but I can get landsick now that I'm living on the sea."

Laurie Schreiber has written for newspapers and magazines on the coast of Maine for more than 25 years.

ONE DAY LAST FALL, JEFF AUMULLER was sitting topside with his 1950s Gibson guitar playing one of his tunes, a chantey about being out sailing: "Dance with me, Blue Lady. Steering by the heavens above, way out here, beyond the tides." The breeze was light, the air had that salty aroma, yachts and tour boats roamed the harbor. The sun warmed the old wooden deck.

Aumuller was in his 30s when he transitioned to year-round life on the water. He started a business making sea bags, did quite well, and bought his Colin Archer. The vessel once belonged to sailor Harry Etheridge, who created the *Yachtsman's Guide to the Bahamas*. Aumuller sold the business after three years, moved to Cape Porpoise to focus on music, then moved to Portland. He also periodically cruised the East Coast, either on *Grebe*, or doing boat deliveries to earn cash.

Jeff Aumuller plays a tune aboard *Grebe*.



Aumuller's old Colin Archer schooner is a unique sight along the Portland waterfront.

These days, he's happiest in Portland, gigging and hawking his new album, *Men & Ships Rot in Port*.

"I just love playing music," he said. "Otherwise, I'd be in the Caribbean drinking rum." *–LS*

Photos at right by Laurie Schreiber (2) (Above) Courtesy Leah Kruger and Matt Garand

Irene Cortese and Jon Archer practice and promote ideas around permaculture at their Gouldsboro homestead.

Hand-hewn shelters with sod roofs are part of the permaculture aesthetic.

Permanent Culture

Living off the land and giving back

STORY & PHOTOGRAPHS BY LAURIE SCHREIBER

IF YOU WANT TO UNDERSTAND Jon Archer and Irene Cortese's way of life, you have to understand permaculture. If you want to understand permaculture—and the ideas and practices that go into creating this sustainable and integrated environmental and social system—it would be a good idea to live with them for at least three weeks.

That's what Archer and Cortese told me when I asked for an interview. When I declined, they cheerfully, if skeptically, agreed to an afternoon visit instead to their homestead, the Zocalo Permaculture Center in Gouldsboro.

It was worth the visit. Their homestead embodies endless invention, as they consider how to make every aspect of their lives conform to the idea of "permanent culture"—or permaculture—as opposed to the temporary culture of environmental and social degradation.

The term "permaculture" sounds like it has to do with agriculture. That's part of the idea, but not everything. Permaculture considers the place of humans in the world—not just our food, but also the other aspects of daily life, such as shelter, transportation, energy, and social interaction.

"When you spend three weeks here, we really bombard you with many ideas and discussion," said Cortese. Originally from Mexico, she greeted me with a big hug and a flurry of Spanish-inflected welcomes.

Archer is quieter, with an easy cat-caught-the-mouse smile. He's been pursuing permaculture ideas since he was in high school, carrying out projects that he found in the sustainable-lifestyle magazine, *Mother Earth News*.

Gardens abound with fruit trees, root vegetables, and leafy greens of all kinds.

"We need to spend more time not working on the easier things—which are heating and food—but the whole situation," he said. "There's a tendency to think, 'I eat organic. That's good enough.' I think you'll see our homestead is very different."

Zocalo is located off a beautiful, winding road on the Schoodic Peninsula. A sign on the grassy drive that says "Cell Free Zone" also functions as a roadblock. Beyond that a path leads to a sunny clearing and a collection of gardens, fruit and nut trees, and hand-hewn buildings that range in size from two large octagonal structures for community use down to little duck houses.

A Massachusetts native, Archer arrived in Maine as a college senior, to take a job as a research assistant at The Jackson Laboratory in Bar Harbor, where he still works one day a week. He bought land outside of Bar Harbor and began homesteading—building a sod-roofed house, gardening, and raising animals. When he moved to Gouldsboro 35 years ago, he continued to commute to work in Bar Harbor, but did so by sailing across Frenchman Bay—he said this environmentally friendly form of trans-

A favorite guest activity is peeling apples for the cider press.

portation is also far quicker than the drive by land.

A musician and contradance enthusiast, he met Cortese in the early 2000s when he was in Mexico to dance and play music at a dance camp. A Montessori teacher at the time, Cortese was planning a trip to Central and South America through World Wide Opportunities on Organic Farms, an organization that links volunteers with organic farms and growers. When she met Archer, she decided to work as a "WWOOFER" (as the volunteers are called) for him instead.

A relationship blossomed. Both education-minded, they have since welcomed all comers to stay with them and learn about permaculture. But guests can't just hang out: They work alongside the couple and implement their own projects. All of that is balanced with celebrations that feature dance, music, homemade pizza, and home-brewed hard cider. By the way, the two aren't zealots. Their sawmill is gas-powered, they do drive occasionally; there's a defunct ATV in their workshop. And if a visitor must have a cell phone—well, okay, but please step outside.

Permaculture considers sustainable production through the relationship between human and environmental systems—selectively harvest trees so that the forest regenerates, design your house to collect abundant sunshine, insulate with natural materials, energize with renewable systems, care for your tools and materials, invite visitors to learn from you and teach you, offer them cider pressed from your apples, and pass the evening in convivial celebration.

Those ideas manifest themselves in the homestead's most striking building, the two-story octagonal "Round Barn" which was hand-built from 10-foot cedar logs. Inside, slimmer cedar beams radiate from the center to support the ceilings. A sod roof provides natural insulation and takes the place of oil-based asphalt shingles. Archer built the barn for cows, but it's now a community space with a second-story summer kitchen, a guest-room cupola, and a deck with railing panels whimsically carved with figures.

"I've always loved octagonal buildings," Archer said. "Also, cedar trees are small, and they taper from fat to skinny, so you can't have long sides with long logs. You have to make many sides."

When I visited, the apple trees were heavy with fruit and wild mint perfumed the air. We walked by an adobe pizza oven, a century-old cider press—the centerpiece of the couple's Sunday socials—and a maple sap boiler.

Greenhouses and gardens featured tomatillos, tomatoes, sunflowers, corn, squash, cabbage, horseradish, grapes, pears, onions, potatoes, and many other edible crops.

Here and there, small piles of scrap metal and plastic—discarded by other people as waste—will be useful for future construction projects.

Archer showed me a smaller building made from adobe and insulated with sheep wool that is held in place with chicken wire. The couple collects water off the tin roof as it runs into tanks, and then gravity-feed it to a sink. "This is the studio," Archer said. "We saw a lot of construction like this in Mexico. We discussed insulating it with hay, but we had the wool, so this was an opportunity to try it. And it works."

A large A-frame workshop, reminiscent of a curved Indonesian longhouse, is sided with home-milled cedar shingles and scavenged plastic panels.

At his workbench, Archer makes models for his inventions, such as a triple-hybrid catamaran that uses sail-, solar-, and human pedal-power. He built a version of the boat and uses it to commute to Bar Harbor, but he envisions building a larger model with room for more people.

Solar-powered electric drives are a big interest here. For example, Archer designed and built an extra-long wooden wheelbarrow with an electric drive wheel that is powered by a solar-charged battery pack. The couple owns a variety of electric bikes, one equipped with a trailer to carry kids or goods. The batteries take 2-3 hours to charge and can support 15 miles of travel.

Although they lament what they call "tempraculture"—coining a new word for the opposite of permaculture—they're optimistic about Maine's movement toward clean energy and sustainable initiatives. Lately, though, they've been pondering their own temporal state.

"How do we get people to continue what we're doing?" said Archer, who is now 60. "Are we going to do it through a school, through a co-op, or through co-housing? We've looked at all these things carefully…. It's time to figure out how we're going to pass this on."

Laurie Schreiber has written for newspapers and magazines on the coast of Maine for more than 25 years.

Bob Vaughan's son Sam (right) left a corporate job in the city to work with his father (left) at Seal Cove Boatyard. He has found new ways of doing things, but also values his father's 50 years of experience.

Passing the Torch

Next generation brings a new touch to family-run yards

BY LAURIE SCHREIBER

GROWING UP, Don Ellis remembers the way his father, Ralph, always smelled like cedar.

Don runs his boatbuilding, storage, and service yard, the Ellis Boat Company, on the same property in Manset, Maine, where Ralph Ellis and his partner, Raymond Bunker, ran their renowned Bunker and Ellis boatbuilding company.

"They worked with cedar planking on the boats, and that smell was everywhere in the house," Don recalled.

Bunker and Ralph Ellis began building boats in 1946, working together into the 1970s. Eventually Don's brother Dennis took over and began to build fiberglass boats. Don soon joined him. Dennis moved on, but Don continued as Ellis Boat Co., expanding new construction, storage, and service offerings. This year, a new five-bay production and service building was added.

In the 1990s, Don's son Shane took time off from being a professional musician and music teacher to work on company projects such as web design, database management, and marketing, then came on full-time five years ago. Now Don focuses on major projects.

"Having Shane here takes away jobs I wasn't fond of doing—getting client proposals out, working with computers," Don said. "I like the nuts and bolts of building."

(Opposite page) Photo by Benjamin Mendlowitz (Above) Photo by Laurie Schreiber (Below) Photo courtesy Ellis Boat Co.

Like Don did in his time, Shane has brought a new outlook and energy that's advancing the company into the future.

It's a scene being repeated up and down the Maine coast in recent years as the next generation becomes involved in family-run boatbuilding shops—a sign of the resilience of the industry and the allure of boatbuilding. Some of the younger generation of builders have come back from high-powered city careers, others have simply worked their way up the ladder at home.

"A lot of our customer base likes to be here because they feel it's special," she explained. "It's not just about volume for the yard. It's about relationships."

The sense of commitment to, and pride in, the family business is a theme. Next gens who have grown up around these yards have an innate understanding of the product and culture. And there's a give and take: the younger generation explores new ways of doing things, while the older generation offers years of experience.

Susan Swanton, executive director of the Maine Marine Trade Association in Biddeford, has noticed the trend.

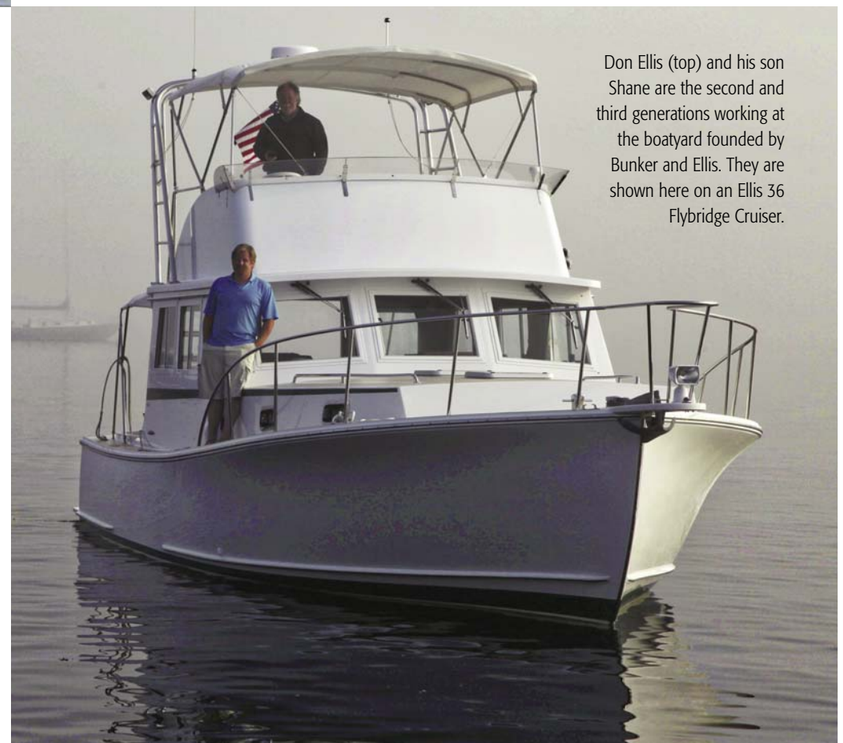
"The generation I grew up with, in the industry, is starting to age out, and I think many are blessed to have kids who want to carry on the family business," she said.

Maine is unusual in having many family-owned boatyards, as opposed to increasingly corporate operations elsewhere in the nation.

"That corporate trend hasn't caught on in Maine quite as boldly as it has in other places," Swanton said. "I'd like to think that's part of what makes Maine a little bit different from the rest of the universe."

Customers like knowing that when they walk through the door at a family-owned yard people know them and their boats and are happy to see them, she said.

"A lot of our customer base likes to be here because they feel it's special," she explained. "It's not just about volume for the yard. It's about relationships."



Don Ellis (top) and his son Shane are the second and third generations working at the boatyard founded by Bunker and Ellis. They are shown here on an Ellis 36 Flybridge Cruiser.

John and Ingrid Kachmar purchased Wilbur Yachts in Manset from Ingrid's parents, Lee Wilbur and Heidi Crock, in 2001.

At Ellis Boat, Don Ellis depended on his personal connections with customers to develop boat projects. Shane has added new technology and organizational capabilities, and introduced more ways to use computers.

At the 200-year-old Hodgdon Yachts in East Boothbay, Audrey Hodgdon is the sixth generation in her family to work at the yard. She is director of sales and marketing, working for her father Timothy Hodgdon, the company's CEO and president.

"When your name is on the outside of the business, it means a lot to you," Audrey said. "If it's a family business, you're going to do everything you can to keep it successful."

In Thomaston, Drew Lyman took over the job as president of Lyman-Morse Boatbuilding from his father Cabot, who started the company with his wife Heidi in 1978. But his father is still there to offer advice.

"Dad lets me do what I need to do to run the company and learn from my mistakes and successes," said Drew. "But he's always there for me. So when I have a decision that needs to be fleshed out, he's great to have as a sounding board."

That's the way it should be, said Cabot. "I always had the attitude that if

Gabe Pendleton (right) worked as an attorney before his father Stanley finally persuaded him to take over the boatyard four years ago. He has slowly been modernizing the business.

Photo by Alison Langley

my sons got involved in the business, I would get the hell out of the way. At that point, it's time for the next generation to come in."

The longest-lived passing-of-the-torch story belongs to the Hodgdon family, which has been building boats since 1816—approximately 450 vessels in 200 years. Like other kids with parents in the business, young Tim Hodgdon worked at the yard during school vacations in the 1970s, learning from his father and employees. After getting a degree in engineering from Wentworth Institute in Boston, Tim joined the company full-time in 1980. Under his leadership the company evolved and diversified, shifting from primarily plank-on-frame work to cold-molded and advanced composite construction, building large cruising and hi-tech racing sailboats and a broad spectrum of motoryachts, from high-speed express cruisers to projects for the U.S. Navy.

His daughter Audrey never expected that she'd work for the family business and credits her parents for not pressuring her. But after graduating in 2007 from college with a degree in marketing and working for firms as far away as New Zealand, she returned in 2014.

"It took going far away to realize this was where I wanted to be," she said. "It's an exciting place to be, and I enjoy the family dynamic."

"He's got a whole different management style, much more modern," Cabot said of Drew. "A company that has a 30-year run—it's time to make changes."

Unlike Audrey, Drew Lyman grew up working in the family business.

Cabot and Heidi Lyman moved to Maine in the late 1970s, and bought the century-old Morse Boatbuilding Company in Thomaston, forming Lyman-Morse Boatbuilding. Drew recalled working there during school vacations, earning $1 a day to sweep floors. While there was no pressure to join the business, he did eventually. Drew started the brokerage side of the company with his wife Mackenzie, and was named president in 2012. He's diversified the company's work, adding technical and metal fabrication, new construction, and marina services with the 2015 purchase of Wayfarer Marine in Camden.

"He's got a whole different management style, much more modern," Cabot said of Drew. "A company that has a 30-year run—it's time to make changes. I was more hands-on in the shop. He builds a more corporate business atmosphere. We needed that, to grow."

Back in East Boothbay, Paul and Verna Luke started the Paul E. Luke Boatyard in 1939 specializing in wood and aluminum yacht construction, machining, and metal work. Their sons, Frank and John, grew up working in the yard.

"It was a fun place to be," said Frank. "The fellows were just back from World War II and there wasn't anything they couldn't do or wouldn't try."

Frank and his wife, Nora, took over in 1992, adding infrastructure and services.

Drew Lyman, with his father Cabot watching at his side, cuts the ribbon officially opening Lyman-Morse at Wayfarer Marine.

Photo by Polly Saltonstall

"When we took over, it was going to change and my father wasn't going to like some of it, but that's the way it was," said Frank.

That happened again under the leadership of Frank and Nora's son, Andrew, who returned in 2010 from a corporate marketing career in New York, bringing with him a next-gen perspective.

"I was either going to reinvent myself down there or come home and reinvent myself here," he said.

Said Frank, "Andy's making of it what he wants it to be. Some I'll accept and some I won't like. But it's his future, not mine."

Out on Islesboro at Pendleton Yacht Yard, Gabe Pendleton had earned a law degree, and worked as an attorney for four years in Vermont and Brunswick, Maine, before his father Stanley finally persuaded him to take over the business four years ago. He has brought new organization systems to the business and added new technologies, including using email more to communicate with customers and vendors.

Up the coast in Seal Cove, Bob Vaughan's grandfather, John F. "Jack" Vaughan discovered the area as a summer person in the 1920s, commuting weekly by steamer from Boston to his shorefront property in Brooksville. In 1936, Jack's son John H. "Hal" Vaughan became a year-round resident and started what became Seal Cove Boatyard. Hal's son, Bob, grew up around the yard, learning by doing.

"My father was not a person to give instruction," said Bob. "If you were interested, you watched and learned."

Thinking he did not want to become a boatbuilder, Bob became a lawyer instead. But when his father's health began to fail, Bob returned home to run the yard.

Like his father, Bob's son Sam also had other plans. Then after college and five years of big-city corporate work, Sam realized the yard was more in line with what he wanted out of life. He returned 10 years ago as second in command, quickly becoming the go-to for new boating technologies and materials and modern racing/rigging techniques.

"At this point, I'm trying to gain as much knowledge as I can and I doubt that will ever change," said Sam, who values his father's 50 years on the job.

On Great Cranberry Island, where Ed Gray started Newman and Gray Boatyard in the early 1990s with Jarvis Newman, Gray's two sons have taken over the business. His older son Josh started working at the yard when he was 14 and found he liked the combination of physical and cerebral work. After college and a year at The Landing School studying yacht design, he leapt at the chance to buy the business when Ed wanted to retire. Josh's brother Seth has since joined him as a partner.

"It couldn't be better for me to have them take over," said Ed. He joked, "I get free dock space."

"It couldn't be better for me to have them take over," said Ed Gray. He joked, "I get free dock space."

Some yards have passed to children and their spouses. John and Ingrid Kachmar purchased Wilbur Yachts in Manset from Ingrid's parents, Lee Wilbur and Heidi Crock, in 2001. John had previously worked in the insurance industry in Portland. After the sale, Wilbur and Crock stayed on for two years, while the Kachmars learned the ropes in production and office operations.

"It was a vertical learning curve," Ingrid said. "Jump in feet first and figure it out."

Ingrid is now executive director of the Harbor House Community Service Center, while John runs the yard, which offers new construction, sales, service, and storage.

In boatbuilding, the multi-generation experience sometimes means next gens watching their parents struggle with a lot of work for not a whole lot of money, but also seeing the excitement of finished products and happy customers, Don Ellis said.

"Some will follow in their parents' footsteps because they like that," he said. "Others will take a different path. But if they love it, they're going to become involved in the business. That's what you see in second- and third-generation boatyards—the kids fell in love with building boats. I don't know of anybody who would take over a boat business because it makes so much money. It's got to be something you enjoy doing."

MBH&H Contributing Editor Laurie Schreiber is also a Mainebiz *staff writer and has covered topics in Maine for more than 25 years.*

California yellowtail, raised at the Center for Cooperative Aquaculture Research, are packed for shipping as Maine Hiramasa.

(Opposite page) Photo courtesy Acadia Harvest

Fishing's Future?

Shoreside research center sets the stage for aquaculture advances

BY LAURIE SCHREIBER

IT MIGHT SEEM IRONIC that a state known for its wild-caught marine species is also home to a world-class facility for raising fish on land. Not only is one of the world's foremost aquaculture research and business incubator facilities located in coastal Maine, but in order to get there you have to drive down a dirt lane (appropriately named Salmon Farm Road), through spruce woods, in a rural town of scarcely 1,500 residents.

The University of Maine's Center for Cooperative Aquaculture Research, known as CCAR ("sea-car"), has become a center of cutting-edge experimentation for cultivating a myriad of sea creatures on land.

UMaine bought the 25-acre property in Franklin at auction in 1999 from what was at the time a state-of-the-art salmon farming company. Since then CCAR has installed the latest technologies in water circulation and wastewater treatment and now has 100,000 square feet of lab, tank room, and business incubator space. Two more tanks, at 300,000 gallons each, which are expected to support up to 121,000 pounds of fish, are slated for completion in coming years.

Aquaculture has been a growing focus for research in Maine. In 1999, the state legislature made it one of seven economic sectors slated for state R&D money through the Maine Economic Innovation Fund, which provides substantial funding for CCAR. Another boost came in 2016 when UMaine received a $20 million National Science Foundation grant to establish a research and education entity called the Sustainable Ecological Aquaculture Network (SEANET).

Photo courtesy of Sea & Reef Aquaculture

Søren Hansen, founder of Sea & Reef Aquaculture, views a crop of designer clownfish cultivated at CCAR.

At CCAR's end, the focus is on hatching and rearing of fish, invertebrates, and algae in support of start-up companies. Over the years, CCAR researchers and commercial interests have looked into culturing food species such as Atlantic cod and halibut, California yellowtail, sea urchins, and edible seaweeds, as well as polychaete worms for the bait market, and ornamental tropical fish for hobbyists. Some of the research has made the leap to commercial production. Other projects are still in development or have fallen by the wayside, due either to technical or financial challenges. The goal is intellectual advances to support the industry.

On a recent visit, Director of Facilities Steve Eddy led the way into one of the rearing units. Each of the 18 massive tanks (12 feet wide and 5 feet deep) holds 3,800 gallons of recirculating seawater. When stocked at full capacity, the combined hold of the tanks is nearly

Maine's Aquaculture Boom

Aquaculture, identified by the private business group FocusMaine as one of Maine's three signature industries, has grown 10 percent per year for the past 10 years, said Maine Aquaculture Innovation Center's executive director, Chris Davis.

Salmon makes up the bulk of the approximately $120 million industry, followed by shellfish, notably oysters and mussels. The industry leases about 1,300 acres of ocean bottom. That's pretty small, Davis said.

"We could grow by 50 percent and still fit the entire aquaculture industry in Rockland harbor," he said. "That's an amazing amount of economic activity in a relatively small area."

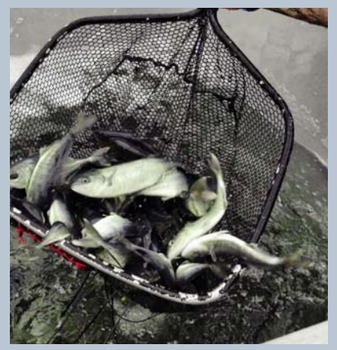


Photo courtesy Acadia Harvest

Yellowtail juveniles are transferred to larger tanks with more room to grow.

Maine has tremendous potential, he said. And there's interest, as illustrated by the scores of small sites permitted under the state's limited-purpose access program.

"There's a lot of interest both in shellfish and sea vegetables," said Davis. "Sea vegetables can be a winter crop with minimal work. And there's tremendous demand for white-cloth half-shell oysters. Maine has a great reputation and there's a strong market. That's been drawing a lot of people into the industry."

Among its programs, MAIC, with partners, offers aquaculture training for commercial fishermen, funds research, and hosts the annual Northeast Aquaculture Conference & Exposition.

29,000 pounds of fish. They're rented by a company called Acadia Harvest, which for five years has experimented with techniques for growing a couple of fish species, including California yellowtail—its buttery smooth texture and mild flavor are perfect for sushi—to marketable size.

Eddy climbed the stairs to the top of one tank and peered in at the yellowtail serenely swimming below. At two years old, they're ready for harvest.

"One of the things we think will make this fish successful on a land-based farm is their fast growth rate," Eddy said.

Acadia Harvest was founded in 2011 by marine biologists Chris Heinig and Tap Pryor. They focused on yellowtail because it's a proven product in the global market.

"There's already substantial market demand," said the company's third partner, Ed Robinson. "Yellowtail ranks number two in global sales, behind salmon, for saltwater fish."

In Maine's salmon farming industry, fish are hatched in a land-based system, then placed in ocean pens for grow-out. By contrast, Acadia Harvest grows fish to marketable size entirely in land-based tanks. This allows Acadia's researchers to grow a warm-water fish, like California yellowtail, in a cold-water state like Maine. They get the benefit of Maine's pristine seawater, which they can warm to the temperature needed by the fish. They also control all other aspects of the closed system, such as optimal stocking density and feed for robust fish production.

One idea now under study is integrated multi-trophic aquaculture: Rather than dispose of fish waste in the traditional manner—processing it through biofilters and sending solid waste to a sewage treatment facility—waste becomes a nutrient source for growing other species such as oysters and kelp. Kelp cleans the water going back into the fish tanks and the oysters become an additional marketable product.

Growing fish at CCAR has allowed Acadia Harvest to refine its production system while doing more than three years of market testing before investing in a purpose-built commercial farm—a project it has planned for a nearby industrial park in Corea.

"There's no way a start-up could run the range of experiments, let alone begin small-scale production and sales without access to an incubator facility like CCAR—not just the tanks, but the experienced people as well," said Robinson.

Another thriving enterprise at CCAR is Sea & Reef Aquaculture. The start-up arrived in 2010, built specialty infrastructure, and now raises more than 50 different species and color morphs of marine ornamental fish. The company ships thousands of fish every month to pet stores across the country.

"We have our own breeding pro-

Photo courtesy Center for Cooperative Aquaculture Research

An aerial view of CCAR, which leverages proximity to the pristine water of Taunton Bay.

gram and we do the whole life cycle in-house," said Søren Hansen, who started the enterprise as a University of Maine student, aided by a Maine Technology Institute small-business grant. Now the company has signature lines of designer clownfish that take advantage of the fish's distinctive color and pattern mutations.

Like Acadia Harvest, Hansen deals with warm-water fish.

"Because of this efficient production system, we can produce a lot of fish in a fairly modest footprint," Hansen said.

CCAR's core is not really those huge tanks, though; it's the seawater. Pumped from nearby Taunton Bay, the salt water travels through sand filters, then a UV sterilizer, to three insulated storage reservoirs (onsite wells also provide fresh and brackish water). The water is then distributed by gravity feed to rearing facilities. There, additional systems include degassers (assemblages of metal plates and accordion-like structures that break water into fine droplets and allow the release of excess CO2), cleaning drum filters, UV disinfectors, circulating pumps, climate-control systems, generator back-ups, and oxygenators. A biological filtration system features countless plastic bits that look like tiny Lego gears, each finely layered with beneficial bacteria that consume toxic compounds carried by fish excretion.

Photo by Laurie Schreiber

Yellowtail are raised in these 3,800-gallon tanks at the Center for Cooperative Aquaculture Research.

Seawater continuously recirculates through these systems—only a small portion at a time comes in from the bay. The system reduces dependence on external water supplies, minimizes CCAR's environmental footprint, and can be optimized for water chemistry, temperature, photoperiod, and other rearing requirements, Eddy explained.

That infrastructure was a crucial springboard for a start-up like Sea & Reef.

"We couldn't have grown as fast as we have without CCAR," Hansen said. "We built the production system ourselves, but we didn't have to build the physical location. Also, CCAR has great expertise, which we've used heavily, especially in the beginning, in building and designing our production system. CCAR's former director, Nick Brown, helped us design those systems early on. And with the other companies, there's shared resources, expertise, and knowledge."

CCAR's Steve Eddy holds an adult urchin, bred and grown for projects like reseeding the wild.

Photo by Laurie Schreiber

Eddy continues the tour into a light- and temperature-controlled fish hatchery that's home to broodstocks for Acadia Harvest's yellowtail, and for Atlantic halibut. Offspring from the latter is sold to Canadian aquaculture companies. Elsewhere, tanks are being modified for a start-up that will grow eels, escape artists that can climb walls and slither through drains. Several tanks hold sediment containing thousands of marine worms. Left behind from a failed venture to develop indoor worm farming for bait and aquafeeds, the worms are excellent candidates for a future venture. Sea urchins grow in long, shallow tanks, for projects such as seeding wild areas that have been fished out. And specially built infrastructure is expected to boost production of sea vegetables, such as kelps, dulse, and nori, and put Maine on the map in the $6 billion global seaweed market.

CCAR has plenty of potential for other projects, said Eddy citing bluefin tuna egg production and Atlantic cod growout as examples. Every new development could be a tremendous economic opportunity for the state and beyond.

"The state has the marine resources that make it viable," said Eddy. "We've got the workforce that's accustomed to working on the water and could readily adapt to aquaculture. We have access to markets like Boston and New York. There's a lot of potential for growth in Maine."

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