FRIB (folding rigid-bottomed inflatable boat) was the culmination of my efforts over 17 years to create the ideal tender, trainer, and escape pod. Cruising, living aboard, racing, surviving a life-raft drift, researching others’ survival voyages, and all the work I had done designing, building, and sailing small craft, inspired me to design the first model of FRIB, the Clam, in 1998 to address the problems I found pervasive with auxiliary craft.

(a) Every mariner needs a dinghy and should carry a survival craft, but many lack the budget and/or space to carry both.

(b) Too many sailors carry only a small dinghy, hoping it will serve in an emergency although many dinghies aren’t even substantial enough to serve efficiently as commuter craft in modest waves.

(c) Inflatable have become the ubiquitous answer to most boaters’ needs, but without a rigid bottom they row like jellyfish. Many do not even perform well under power, and few are fit to sail at all.

(d) More efficient RIBs command a lot of deck space, can only be efficiently powered by a large outboard, still prove wet in a chop so often must be operated at very slow speed, and like all inflatables, offer little interior space for a given overall length.

The patented FRIB system allows mariners to halve the volume required to carry a rigid dinghy. Previous folding or take-apart dinghy designs have typically proven costly and complicated, and often seriously compromised each design’s other qualities. Folding boats do not reduce volume either, but simply end up short but high packages. Boats that require assembly are unsuitable for quick deployment. It took a while to figure out deceptively simple solutions that keep the FRIB concept cost effective and the boat easy to deploy. A boat like the Clam’s substantial unfolded size and refined shape truly enhance its capabilities, whether carrying a maximum of passengers and gear, exploring cruising grounds, or negotiating open waters in an emergency.
Although the FRIB system can be employed to enhance the qualities of any rigid-bottomed design such as a V-bottomed planing style RIB or a kayak, the first model of FRIB was specifically designed to balance sailing, rowing and powering capabilities to suit most cruising sailors’ primary needs. I’d owned several rigid dinghies seven to eight feet long, but I found them to be wet in even modest conditions, and marginal load carriers, even for just two crew. A Clam’s rigid hull is 10 feet long, giving her an overall length of over 11.5 feet, yet her folded maximum dimensions are just 5 feet 2 inches long by 4 feet wide by 22 inches high, allowing her to nest on most cabin tops or other areas that are out of the way, keeping more of the deck clear for safe and efficient deck work. Even those who sail relatively small boats now can carry a substantial dinghy with good performance characteristics. Between her optional rig, oars, and perhaps a small outboard, cruisers who prize independence can enjoy unlimited range while escaping the expense, weight, and maintenance of larger and more complicated machinery.

Altering the lines slightly and raising the sheer using the inflatable tube, I based the Clam’s smooth, slippery hull on a lapstrake catboat designed by George Duggan, “the dean of Canadian yachting,” for his grandchildren in which they could learn to sail. With minimal wetted surface and tubes well above the water, drag on a Clam’s hull was much less than an inflatable. A mere three-horsepower outboard can drive the Clam at a maximum of 8.5 knots with single passenger, 7.5 with two.

Under oars her speed and tracking proved clearly better than any other inflatable with rigid bottom or not, as well as many rigid dinghies, yet she retained quite good maneuverability.

Under sail, FRIB showed herself to be very stable and fast. Her tubes assure that she will not scar or damage other boats. They combine with watertight compartments to make her virtually unsinkable and a remarkably safe and fun “bumper-boat” trainer, as well as small racer and commuter dinghy suitable for all ages.
At rest, the Clam may feel "tippier" than a typical inflatable, but she retains a much greater range of stability. She remains much stiffer than a rigid dinghy, too, gaining immense reserve stability when she heels enough for the tubes to reach the water. Without capsizing her, two people can sit on the rail. Swimmers can board even an empty boat from the stern or over the side. Because the Clam’s tubes are smaller in diameter than other inflatables, it’s even easier for a swimmer to slip back aboard over them. Should she ever capsize, a single crew can easily reright her. She self-bails, coming up completely empty of water—something impossible for a rigid dinghy without floatation tubes added.

The Clam’s full hull, generous freeboard, and highly swept bow give her immense load-carrying capability, seaworthiness and comfort. Loaded with four adults and gear, a total of 700 pounds, her tubes still do not rest in the water. Her raised nose resists digging into seas while the inflated tubes well above the water deflect spray, keeping the boat exceptionally dry compared to other inflatables, most RIBs, or rigid dinghies. We wanted to create a boat that would be able to maintain good speed through chop and wakes. I’ve never had to slow a Clam through chop or wakes, and often enjoy playing in the waves while planing RIBs and other dinghies have had to slow to just a few knots to keep from getting swamped. Most harbors maintain speed limits anyway, so boats with theoretical performance advantages can take advantage of them only occasionally when in open waters and only when those waters are pretty smooth.

Safety was a primary driving factor in the development of the FRIB concept and the Clam design. As a former contributing editor to Sail and Sailor magazines, and senior editor of Cruising World, I had written scores of articles and contributed to seven books on survival, safety and seamanship. I’d also authored two survival narratives (Adrift recounts my own experience; Capsized that of others), and I had interviewed a
number of other survivors of shipwreck. It is important to note that I do not suggest that a Clam is a replacement for a life raft. All types of craft will have advantages under specific conditions. I recommend that all mariners venturing offshore carry a life raft. My studies of marine disasters have shown, however, that survivors greatly benefit from the availability of secondary boats, even quite minimal dinghies. The most modest maneuverability--the capability to navigate within a mere 15 degrees of dead downwind--provides numerous benefits to survivors, from intercepting rain clouds or ships to reaching shore. Such maneuverability would have shortened several of the most famous survival drifts by more than 50%. So what I wanted to create was a vessel that could enhance the mariner’s safety in the case of an emergency. Also, for reasons of cost and space, many mariners choose to carry no life raft. I wanted to provide them, as well as those wisely carrying life rafts, with a dinghy that at least is far better suited for use in an emergency than other small boats. Fit with rig, canopy, drogue, and other survival gear, a Clam served my wife, Kathy, and me as our primary commuting and survival craft while cruising a 40-foot trimaran for two years. The Clam’s size and capabilities make it enough of a "real boat" to have allowed me to sail myself to a safe landfall in the Cabo Verde islands in 10 to 14 days rather than drift in a raft for 76 and over 1,800 miles to the Caribbean.

The boat can be rowed or sailed with all or part of our custom-designed canopy erected. The forward section can serve to keep the groceries dry with the aft section folded or removed. When attached, the complete canopy stores within the hull and automatically erects when the crew opens the boat.

The Clam’s unique hinge system allows her to be deployed quickly. Like a life raft, an optional automatic inflation system would open her up and erect the canopy. Even with a foot pump, a crew can easily inflate her 10-inch diameter tubes in a few minutes, much quicker than inflatables of comparable length but with big-diameter tubes, yet her inflated tubes still keep her unfolded form rigid enough for immediate use. Crews can secure the bottom’s retaining system after boarding if there is no time to do it before launching. In addition, the Clam’s hull was cored and hand laid with biaxial cloth, making her one of the strongest 10-foot dinghies available, yet
even with her sole with watertight lockers, initial models weighed only about 120 pounds (roughly 20 to 40 pounds less than most 10-foot rigid dinghies). The sole creates a double bottom and contains two watertight compartments, with a third in the bow. This provides hundreds of pounds of additional reserve buoyancy. Watertight hatches allow easy storage of gear. The inflatable tubes add another 700 pounds of reserve buoyancy. Unlike many inflatables that founder, swamp or capsize when something punctures a tube, the Clam’s rigid hull and substantial freeboard give the crew the opportunity to repair any tube damage and continue on their way.

When we completed our own Clam and used it daily for two years while living aboard and voyaging in Australia between 2002 and 2004, we found it performed better than we had expected in all respects. The boat also got a warm reception wherever we went.

Unfortunately, after building about 14 boats over a two-year period, the builder of the Clam decided to retire in 2003. Clam owners should note that the builder was not a partner or in any way directly connected with myself or my associates, except as a builder constructing the boats under limited license. Some boats may have been shipped without an essential “waterdam” membrane between the bow and stern sections, which keeps them absolutely watertight. These boats can be refit with membranes. Any owners of this boat are welcome to contact us to sort out any problems they have had with these boats.

There remains a good deal of interest in the boat, which was widely endorsed by editors of sailing magazines such as *Cruising World* and *Sail*, as well as such notables as Lin and Larry Pardey. In December 2010, we were approached to develop a new model of FRIB, which like the prototype would balance performance under sail, oars, or small outboard. We have now developed preliminary drawings for this FRIB with our associate Steve Weiss. Our client is developing business plan. We maintain the hope that eventually, FRIBs will include kayak, V-bottomed planing powercraft, and other dinghies/lifeboat configurations. Those who want to follow developments should tune into our News section and other FRIB pages in the design section.