

Brockway 16' Skiff Construction Guide Corrections
Timothy C Visel
The Sound School, December 2008

I was recently made aware that the 1982 publication entitled: "Plywood Work Boats for Small Scale Fisheries" was again available as an U.S.A.I.D. document (DEC # PN-AAN-485-AID IBSAN-6-0016. It's been almost three decades, so I was a little surprised. It had been out of print for such a long time. I was pleased to hear that it was again available – we had offered Brockway Construction Workshops with our adult education program and outreach program for several years here at the Sound School. Some of our students have built them for their own use – fishing and lobstering in Long Island Sound. Susan Weber, our Adult Education Coordinator has been sending out construction guide copies for several years. Thinking it was a local question, I offered to have the corrections ready in an hour. That's when I learned the person calling me was from the West Coast, and that he had obtained the directions from "the government." In a few minutes, I realized the source and his question was a good one, "How do you line up the stern and a transom so that the skiff was equally proportioned?" -- a good question and then it dawned on me, the caller had the original 1982 version which didn't have the April 1984 corrections! Peace Corps volunteers made several critical changes/suggestions during the summer and the fall of 1983, I obtained the information from Mary Jane Beardsley, head librarian of the URI ICMRD Center library.

I responded to questions and had a written response to several questions by April 1984. I didn't think A.I.D. even got these corrections. I told the caller to check our Sound School website and the 16' corrections would be made available shortly. They are listed below.

ADDITIONS/CORRECTIONS PLYWOOD CONSTRUCTION GUIDE
APRIL 1984

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Reports from the Peace Corp Volunteers
Fiji, Haiti, Samoa, India, Bangladesh

The first printing of the plywood guide has generated suggestions from Corp Volunteers in the field. Most concerned problems with the rails or sheer clamps I asked Mr. Brockway about the length of time it took to properly bend the lumber in open air. Earle told me it takes as long as a year. A different method, see item #8, is to utilize two thinner pieces and glue them together on the skiff/mold, see page 11 of the guide. The second most reported problem was maintaining the skiff's shape. A centering string can be pulled from the center of the stern to the center of the transom. This string represents the centerline of the skiff and can be measured for proper shape, see corrections item 5 and 9.

Concerns were addressed about the availability of plywood panels. In some countries, several volunteers reported success by making arrangements to use recycled plywood, old shipping containers at local ports. Apparently they had to compete in a rather intense "after market." These used panels were stabilized by several thin applications of the polyester resin and holes patched with ply pieces and

resin. Reports indicated these conditioned panels resembled a medium exterior grade A/C panel and yielded good results.

Finally the transom height can be reduced about 3 inches. What has been happening is that Peace Corps Volunteers have been building the skiff and reducing the transom later- cutting off about 3 inches, see item #1.

1. The height of the transom can be reduced 3 inches, or 21 inches at each edge (instead of 24") and 23 ¼" at highest point (original 26 ¼').
2. The two sections labeled "C" on page 36 shown on the bottom panel cutting plans can be eliminated.
3. Comments received to date indicate that it is easier to cut transom sections from entire sheets rather than laminating pieces to form a complete transom. (See cutting plans and optional materials.)
4. The transom is attached so that its full width will be planed flat to accept the plywood bottom. It is important to note the angle of attachment and that the inside edge of the transom should be slightly above the plywood slides. The outside edge (transom) should be higher and this excess removed very similar to figure 8 for chine assembly.
5. To maintain the proper shape of the skiff, the plywood sides should be 33 inches apart (top edge of plywood) at first floor timber (at bow), 66 inches apart at the middle floor timber.
6. The frames and/or thwarts (seats) should be installed before the sheer clam (rail). Frames should extend to the top of the sheer clamps. It will be necessary to install filler blocks at these areas similar to photograph 9. Do not glue frames to floor timbers.
7. Roofing nails or something similar can be utilized in butt block, transom, chine and sheer clamp (rails) assemblies.
8. The time involved to bend the sheer clamps (rails) has been found to be excessive. Four pieces of lumber 1" x 6" x 18' long is a good substitute. In this method, two pieces (on each side) are laminated (utilizing glue) to form the full 2" x 6" with the excess trimmed off. The procedure is as follows, attach a single 1" x 6" x 18' to each side overlapping the plywood as described on page 20. Glue and nail the second 1" x 6" x 18' to each side. It should take at least 150 nails on each sheer clamp. The excess sheer clamp is cut off at transom and stern. The frames on seats are important in determining the shape of the skiff during the sheer clamp attachment. The result will be a laminated sheer clamp 2" x 6" that is trimmed to the exact length required.
9. To insure the skiff's shape when attaching the transom to the sides, a piece of string is utilized between the stern, mold and transom. This allows visual inspection of stem, mold and transom alignment. To accomplish this a nail is driven in the center of the stern, the middle of the mold and the center of the transom. A string is drawn past all three nails; they should all be in alignment.

About the Brockway Skiff – A Look Back

My phone called recently described a web search for a fuel-efficient workboat and the Brockway came up. The caller was interested in fuel-efficiency and being able to build it with modest tools. I advised him that he had indeed found a good candidate. I had, with my son, Willard, built a 14' skiff last year and a 16' skiff several years ago. The corrections issued in 1984 really didn't explain some of the construction

problems, however, they were needed and addressed those same concerns raised some 25 years earlier. *Why* the Brockway – and *why* a “Construction Guide.”

Originally the construction guide was proposed for FAO disaster relief as an extension / technology effort. Two huge typhoons had destroyed thousands of small inshore fishing vessels and an urgent appeal was issued for a simple strong easy and quickly built vessel to replace those lost in a the storm.

As an instructor at the University of Rhode Island Fisheries Dept., to me, the appeal described a vessel type that with my brother Raymond, had years of experience – the Brockway Skiff.

I quickly put together a proposal addressing the United Nations FAO (Food and Agriculture Organization) request highlighting two key areas:

- o Appropriate Technology Transfer Artisanal Fisheries in less developed countries – 1981
- o Resource sustainability/conservation and fuel efficiency – energy efficient small scale fishing operations –1981.

Brockway Skiff 16-Foot Construction Guide Supplemental Introduction and Review of Corrections

The proposal to ICMRD in March 1981 highlighted these international assistance and development concerns. Much of the guide was in response to the emergency – the need to replace literally thousands of small vessels and to do it without long-term social/economic harm. That was the subject of my small-scale fisheries research at the time with F.A.O. gear technology specialists such as David Thompson. Although the proposal was not part of the official FAO response to Asian floods it did gain the approval of the University of Rhode Island US AID Strengthening Grant as part of the ICRMD centers outreach and improvement programs. Four months later the URI ICRMD program had just been awarded a contract to train Peace Corps Volunteers in small boat construction. Dean Donovan, Director Donald McCreight, Christina Mortimer, Supervisor of International Training and Dr. Conrad Recksick, URI Fisheries, Dept Chairman supported the proposal for submittal to US AID in 1982. By 1983, 100 copies were made available to the Peace Corps program by Program Director Neil Ross and a second 100 copies distributed to FAO by ICMRD Librarian Mary Jane Beardsley. The original guide contained a questionnaire and survey to provide questions or ask for additional information. Almost immediately questions/problems came in. The 1984 corrections were in direct response to the distribution of the first 200 copies. By the late 1980s several hundred copies had been made available - all with corrections provided to URI with the help of Charles Donmoyer, Coordinator of ICMRD student training programs. Since that time I do not feel the original guide was amended to reflect these suggestions/changes.

What to look for –

The original guide has a picture of a 16-foot Brockway skiff with a MA or Massachusetts registration on the bow. It was my brother's (Raymond Visel) skiff, which he used for commercial clamming in Chatham, Massachusetts next to Clint

Hammond's Old Oyster Shop. The person in the vessel is actually my sister Marguerite hauling in a flounder fyke net over the rail. (It was truly a family effort, as Raymond did all the photography!) If you have this guide with this cover you do not have the corrections! The later publication has an enlarged photo taken by Raymond showing Earle Brockway working on the 16 ft skiff "Earle Brockway, A Connecticut Boat Builder 1920-1996." If you have this version the corrections should be found on page 4. This is the version we have been sending out by the Sound School since November 2000. So many questions came so quickly after the 1982 guide we thought it to be prudent to build one ourselves to learn about some of the problems and Ray and my father set to build one as quickly as possible. They did most (nearly all) of the work and it was built in about 2 weeks – a longer than expected time, and Earle chuckled when I went back with some questions. One of the biggest problems was the sheer clamp – rails – the time it took to bend them so they can be attached. We had anticipated a "quick bend" but this proved to be anything but the case! Peace Corps volunteers reported that attaching them was impossible at least with the one-week time frame we had promoted in the guide (on page 18) and to Peace Corps Trainees at the then URI School of Fisheries and Marine Technology. After some quick consultations with the Tuxis Lumber Company of Madison, CT, they provided a quick solution. Two one x six x 18 foot long pine boards were attached one at a time and laminated with polyester resin to create the full 2x6 rail see correction #8. Earle mentioned that it takes a year to 18 months to bend the lumber open air with stones (weights) described with photos and figure #11 of the guide. When I mentioned the problem Earle laughed and said, "sure it takes a while" – he waits and then selects two pieces with similar "sets" – he thought the solution was a good one. He felt the minimum time was six months – much too long for our purposes. The second most question/concern involved the height of the transom which looking back describes differences in the plans/designs of 3 skiffs (all 16 foot extra wide versions) but had different rail heights – and it appeared that the version William Highsmith measured (Mr. Highsmith spent over a week with Earle as my brother Raymond would stop in and take photographs) was designed for a 1x10" rail and not a 1x6" rail. Therefore many of the questions mention an extra 3 inches of transom height, which after Ray completed the prototype we noticed this also. See correction # 1. When we returned to Earle and spoke to him about it he recalled that the person who ordered the skiff wanted a higher and heavier rail so he had increased the transom to accept the 1x10 instead of the 1x6. It didn't change the plywood sides but 3 inches would appear as extra if the proper rail lap was used.

What we suggested is to just trim the excess off. I have seen several built Brockways in Connecticut – some produced by the Fitch, Groton, Ledyard, Old Saybrook and Madison high school technology classes and the 3 inches is evident. It does not impact serviceability or function – and some owners have just adjusted by trimming after purchasing the skiffs.

The third most often asked question/concern was how to maintain the skiff's "shape" (see correction items #5 and #9). What Earle told us was for most of the skiffs 14' and 16', he would adjust the shape by eye using temporary bracing. We found this to be very much skill-dependent – after decades of building such crafts no doubt! What we suggested was a "centering string" nailed to the center of the stem – and center of the transom. The mold is something Earle did not use, but Bill Highsmith sort of insisted we incorporate it into the design and I am glad now we did. The mold is inserted into the sides to help keep the skiff's shape. Many have built one and kept it as it can be reused multiple times. With the mold, the centering

string can give measurements and check widths as in # 5. This is the question my West Coast caller had and it is not in the 1982 guide.

Some general comments – Brockway Boat Construction Procedures

Looking back, we were a little optimistic about the time it took to build a Brockway skiff. Although Earle could build 16-foot skiff in 4 to 5 days he had mastered the process, economizing both materials and time. The key, it seems, and mentioned by Earle is that he would not work on one skiff at a time but had several started in several stages. This advantage would be shown in great detail a year ago when, with my son Willard, we built a 14-foot skiff from the 2002 Adult Education bulletin "How To Build a Brockway Skiff". Just as with the 16' skiff we found some adjustments / corrections and these are available from our Sound School Website www.SoundSchool.com. But what was really bought home to us was the economy of building not one, but 3 skiffs at a time. We found that much of the time was spent waiting for the polyester resin to cure – so we had this "down time" in the process that Earle had solved. Having spent many hours at his boat yard and watching the actual process it was always "Earle in Motion", in one day I watched him work on gluing up a transom, and while that was drying, cutting out the sides, when finished he returned to a skiff he had glued chimes earlier that day. What Willard and I soon came to appreciate was dragging out the tools getting ready – doing a step, waiting – tools back – tools out – a step putting tools back etc really lengthened the process. While the tools were out and ready it could have been easy for us to spend an hour on another hull etc. So the original 1982 estimate of 5 days was not accurate if you took into consideration of gluing/set up and assembly time. It should have been more like 8 to 10 days.

The original concept was in response to catastrophic Asian floods caused by a typhoon, the goal being rapid replacement – large numbers of vessels could be built in a relatively short period of time. Extension professionals would become the process (technology) transfer agents – all dependent of course upon suitable construction materials – which Earle had pretty much standardized to the home construction market in eastern Connecticut. Nearly all of the construction materials were leftovers from building and remodeling projects. Constructors would arrive at his boatyard with leftovers, or surplus materials. (Earle never had to get materials the materials came to him.)

Some final notes – several comments from users of the guide have asked about patterns – if they were available or save time. I do remember seeing some patterns at Earle's boat yard 3/8 inch ply score or hardened resin plywood panels – they looked old almost like composite Bake-lite – they were stored in a shed now gone. He did maintain that when he marked out a skiff he just did not do one, but 10 – so that would make sense that he used patterns to trace out side panels.

I hope these corrections/comments will be a help to those who plan to build a Brockway.

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Adult Education and Outreach Programs
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Earle Brockway's Boat Plans Distributed Worldwide with Peace Corps Efforts

Timothy C. Visel
The Sound School – November 2000

While employed at the University of Rhode Island, a message from the U.S.A.I.D. United States Agency for International Development came across my desk. It described the recent plight of several countries' small-scale fishing vessels that were destroyed by a huge typhoon between India and Bangladesh. An urgent appeal from United Nations FAO (Food and Agriculture Organization) followed a few days later issuing a request for proposals to assist fishermen in replacing several thousand of small scale fishing craft lost in the storm. Proposals must address easy to build procedures, low cost, good reparability and could be launched from the shore or beach. To me, it described the Brockway skiff I had use to gill net fish, trawl flounder, oyster and clam as well as lobster with my brother Raymond. Mr. Brockway had built fishing skiffs with his brother in Old Saybrook for many years with little in the way of tools, and using available construction materials. I showed the announcement to Ray, who agreed to do the photography for film cost. Bill Highsmith already employed by the Peace Corps Boat Building programs, prepared the 16 foot skiff lines plans for a modest fee. My sister Marguerite agreed to do the ICMRD cover. Funding for the guide was made available to the University of Rhode Island under Grant AID/DSAN6-0116. The grant amount was \$700. Earle Brockway said of course he would help out and asked for nothing to print his plans.

Almost 20 years have passed since the guide was printed and every once in a while, I get a photograph or see an article about the Brockway design overseas. A few years ago, a visitor showed me a beach in Haiti and it was covered with Brockway boats. I would tell Earle stories about his design in other countries and he seemed very pleased. Mr. Brockway passed away in 1996; the last member of Connecticut boat building family that spanned several generations. I feel however, the Brockway design will always be remembered as a simple, strong, fishing vessel for inshore fishermen throughout the world.

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"Mail Buoy"

Brockway Tradition is Timeless

It was terrific to see Michael Crowley's story about Brockway-style skiffs. (NF, Sept 07, pg. 38). I always enjoy reading about or seeing Brockway skiffs from Southern Maine to the Chesapeake Bay. It's been over a decade since the flat irons and hammers fell silent at the former Brockway Boat Works, located in Floral Park, Old Saybrook, Connecticut, but interest in Earle Brockway's family's design and construction techniques continues to grow. I was fortunate to spend a lot of time with Earle Brockway, the last of five generations of Connecticut River Brockway boat builders. Visitors to the lower Connecticut River will find "Brockway's Reach," "Brockway's Island" and "Brockway Ferry Road" -- all referencing the maritime impact of his family. What isn't so well known is Mr. Brockway's generosity and interest in small boat fishermen regionally and internationally.

According to Earle, the Brockway skiff and scow evolved from the 1920's Connecticut River turtle, duck and shad fisheries. Many of these uses included duck/waterfowl hunting in the winter, so desirable features included stability, ease of maneuverability and shallow drafts. The first Brockway skiffs were of traditional design-planked construction, hard chine not unlike the small work skiffs of Niantic Bay and Noank, CT. Originally, a boat for bay and river, the family began experimenting with plywood in the 1940's, first replacing the bottom and later, the sides. The first all plywood versions which included the transom assembly, came out in the 1950's. What was amazing to Earle is that customers wanted higher sides for the skiffs and so they became prevalent outside rivers and bays. After a "high-sided" version was added, the skiffs' popularity soared. Scow boats continued in the traditional lower profiles and were used for oystering, lobstering and of course, shad fishing. They were known for their strength, durability, holding capacity, ease of repair and maintenance. Fishermen loved the lower initial cost, (they came "unfinished"), and you had to provide your own painting and remove the extra tar.

In 1972, I purchased my first Brockway with my brother Raymond. We used them for many inshore fisheries, and soon realized why "Earle couldn't make enough of them;" although they were slower, the boat was tough, could take a lot of punishment from the gear and was a good sea boat, and most importantly, reliable. We would own several over the years. In 1981, when an international request was issued for a small, simply constructed, strong plywood workboat, as part of the United Nations' response to floods in Asia, we submitted the Brockway design. A year later, the construction manual plywood workboats for small-scale fisheries and photographs by Raymond appeared a year later. The manual was designed for disaster relief, Peace Corps and US A.I.D. fisheries extension efforts. The "Brockway" design would soon become available worldwide. In fact, my son Willard even saw one on a trip to Fiji in 2005! Earle didn't want or expect anything for the

design – his simple response was “Commercial Fishermen need help once in a while,” followed by, “I hope they will come and visit me someday.” And, some did. A few years before Earle passed away, a visitor from Haiti came to see him with photographs, and on the Haitian beach were several “Brockway’s.” He wanted to visit the man who had helped his village.

That was the type of man that Mr. Brockway was – very unassuming in character and always amazed at the popularity of his boats. The 16’ “extra –wide skiff plans” went into extra printings. The Brockway style skiff will most likely be one of the most popular and easily recognizable inshore fishing boats of New England. It was great to see that popularity continued and to read about the legacy of Earle Brockway.

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Brockway Plans for 14’ skiff and for 16’ skiff are available for free!

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