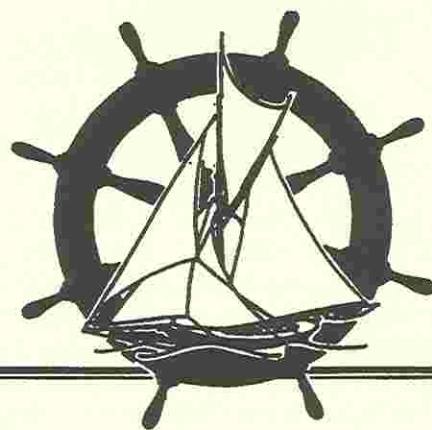


THE HELM

Summer, 2003 - Volume 21, No. 2



A PUBLICATION OF THE CLASSIC YACHT RESTORATION GUILD, INC.

Elf, past and future



President's Message

A Time to Reflect and Celebrate

... by Rick Carrion

Finally a moment to relax! But what's wrong with that picture? For a teacher of today's public high school students, summers are cherished times for most teachers. At the moment (the actual time I am writing this) I am sitting at my friend Lynn Porter's Chesapeake Bay side beach house watching the sun go down. I take this moment to relax and actually celebrate a project, that being the drilling of a two-inch hole through twenty-two inches of American Black Locust, literally one of the world's hardest woods. It turned out to be perfect . . . or as Graham said, "dead on!" Brian's article will fill you in on all the details.

The sunset is incredible, and somewhat reminiscent of the past several days. It is Aug. 8, 03 at 19:15 hours', we have a Bermuda High (clockwise flow) and a mid country low (counterclockwise), each working together to hold the jet stream pumping in air from directly down south. The air is typical for summers on the Chesapeake Bay. . . hazy, hot, and humid!

As I sit here I see Maryland's Turkey Point lighthouse in the distance with her light just coming on to be an aid to navigation. The Turkey Point lighthouse is my favorite because it is the first lighthouse I see when departing on a voyage and the last one I see when returning home. It was recently restored to working order and relit December 2002.

When I look out the sun is about 30° azimuth, but hidden behind a cloud through which it beams a ray of light on the Bay. A pencil thin shaft of bright red to gold colors flows. This reminds me of the past few days when we (Graham, John, Bill, Brian McC., Jay, and Brian S.) went through all the problem

solving to drill our shaft hole for ELF. We problem-solved through the alphabet. We constantly refined or redesigned plans of action. The sun beams down brighter and brighter, but only in a small shaft and pin point. As I watch, the sun moves from behind the clouds and develops a path of amazing colors growing directly toward me. To me this symbolizes the success of actually boring our absolutely perfect hole for our propeller shaft. Wow! What a day! And now the sun is casting down a silver tone over everything. In the big picture I have anguished over this project because there was no margin for error. I felt the elves were helping to get it absolutely perfect. The joke about the wood we drilled through (black locust) is that it is not only harder than stone, but it lasts a few years longer than stone.

On other issues, I have worked to build up varnish on all interior brightwork. I wish automatic sand paper were available; you know the stuff you throw down on a board and it wiggles around until the surface is like a mirror. I have had a full diet of sanding and varnishing. When reinstalled, the cabin will have a proper five coats of varnish to start a new life. We are moving ahead with finishing the interior now with the diesel in place and secured.

As the clear crisp days of fall arrive we hope to be installing decking and painting the hull. The end of Elf's restoration process is in sight and the work has been extremely rewarding. I am very proud of all that we have accomplished together. Once again I want to say a Big Thank You to everyone who has helped through continued contributions of time, money, and encouragement!

In closing, I want to invite everyone to our 21st Annual Crab Feast/Barbeque and Silent Auction. Please mark your calendar for September 13 at 13:00 hours. (September 20, rain date). Plan to come by boat, car, helicopter, or by horseback, but don't miss it! If you make a donation to the silent auction we will give you a free one-year membership in the Guild. So, lets make it the best ever!

Graham's Letter

Time Marches On . . .

I guess it wouldn't bother me so much if it were not for Edna's historical significance. Back before the turn of the century (1880's) the Gloucester fishermen realized that if they could do away with the great bowsprits and build out the bow of the schooners to use up that triangle, they could bring the forestay down to the stem. Now the jib and headails could be changed "on deck." This was much safer than dragging the sails out on a twenty-foot bowsprit which meant fewer men were lost overboard while changing sails in the notorious North Atlantic gales. In the North Atlantic you did not want to be caught short-handed when the cod were running. Building out the bows created the graceful overhanging bows that became the distinguishing feature of the modern yacht.

Near the end of the nineteenth century designers saw the huge advantage of this innovative change and adopted it for racing yachts. Safer and faster headsail changes won races. The schooners are called knock-a-bouts and yachtsmen for this new design also adopted that name.

My little thirty-foot sloop, Edna, was the first class of knock-a-bouts ever designed and is the sole survivor making her the oldest knock-a-bout in existence. Built in 1893 this class revolutionized yacht racing at the turn of the century, and created the shape of the "modern" yacht (and it's true) no one ever believed Edna was over a hundred years old.

That is why, as I said at the beginning of this piece, that I feel so bad. I recently changed her tarps and realized that my beautiful little sloop was rotting. Probably has been for a while. So what I devoted my life to for over thirty years (restoring boats for others) I failed to do for myself. My friend Carl Brown called Edna a "brave little sailor" and she was. She would get a bone in her teeth and not back down. She maneuvered like a dinghy and sailed like a true Gloucesterman.

So while you are breaking out the handkerchiefs, what's my point? I don't really know; perhaps it's that cycle of life thing we dwell on sometimes. Beautiful wooden boats are eventually reabsorbed into the earth from where they came and it's all part of why wood will always be the perfect material from which boats are built. Elf was nearly there. In fact, few boats in that condition are saved. Her original beauty and historical significance drive the restoration effort so she will be good for another hundred years. I think Elf will now have a shot at the title of the oldest wooden yacht in the world.

Note: If Graham can find someone who will lovingly restore Edna, he will donate her for her preservation. Email Rick for more information. :
elf1888@earthlink.net



Elf's Shipwright

Guild Vision

The Classic Yacht Restoration Guild is a non-profit membership organization dedicated to the preservation of traditional watercraft, both power and sail. Yacht restorations are accomplished through a combination of member donated skills and resources. A cooperative educational setting is provided by the Guild for all members who wish to acquire or sharpen boat maintenance and restoration skills. Our membership is diverse. Each member can participate either as an instructor, a student of restoration techniques, a participant in Guild sailing events and cruises or as a supporter through dues and donations. The Guild also offers a variety of resources and skilled professionals who are qualified and interested in helping you connect with the right people to assist with your project.

Work on our flagship *Elf* currently involves restoration of the original rig, deck, and cabin configurations. In addition, the Guild has received donations of many small craft which are used as demonstration and education projects. Ships carpentry, rigging, mechanics, and fine wood finishing are all topics covered by periodic workshops held while restoration projects are underway.

Once a Guild vessel is made seaworthy, the true pleasure of operating historic or significant small craft begins. Members are encouraged to sail Guild vessels with emphasis on instruction of boating safety, piloting, navigation, and the maritime history of the Chesapeake Bay. The Guild plans several cruises to maritime and waterfront festivals every season. Members serve as crew and staff displays at these events.

As a non-profit organization, the Guild always welcomes tax-deductible contributions. For example, the Guild received a 1963 vintage Lightning class racing sailboat and a large library of titles on boat building, maintenance, and maritime history. Also, donation of items used for restoration or fund raising are also tax deductible.

With a growing membership, the Classic Yacht Restoration Guild looks forward to increasing activity and good times. Please ask a member for further information and details.

Elf 1888
Sailing at
Marblehead



Stebbins, *ELF* photo courtesy of:
Hart Nautical Collections, MIT Museum

A Jig for Every Occasion: Installing Elf's Auxilliary Propulsion

... by Brian McCandless

When she was built in 1888, Elf's lines and full compliment of sail made her competitive for her world and time. Auxilliary propulsion was neither warranted nor weight-effective. She was a cutter-rigged gaff topsail racing yacht. But by 1914 a Lathrop engine was added and Elf's metamorphosis was underway. In 1917 the lead ballast was removed for the war effort - Elf saw duty in New York Harbor as a motor launch. It is not clear when the engine was removed but in 1922 when she was converted to a marconi rigged sloop. During the late 1900's, as a yawl sailing the Chesapeake Bay, Elf resumed a career as a sailing vessel and home for Rick. It carried no motor.

Now, with the present restoration, and the decision to carry auxilliary power, installation of a motor has become a top priority so that surrounding hull fittings can be completed. To accomplish this in such a way as to economize on time and available resources, a dedicated core group of Guild volunteers has pondered, debated, hustled, and created the necessary parts, tools, methods and jigs.

The process began with donation of a Westerbeke 33 hp diesel motor by Jay Aigeltinger in 2000. This motor is an ideal size for Elf, features aluminum castings to conserve weight, and will be used to drive a 3 bladed 16-inch diameter brass propeller. During the winter of 2001-2002, Rick overhauled the motor with the assistance of Henry Long, considered to be the best diesel mechanic in the bay area.

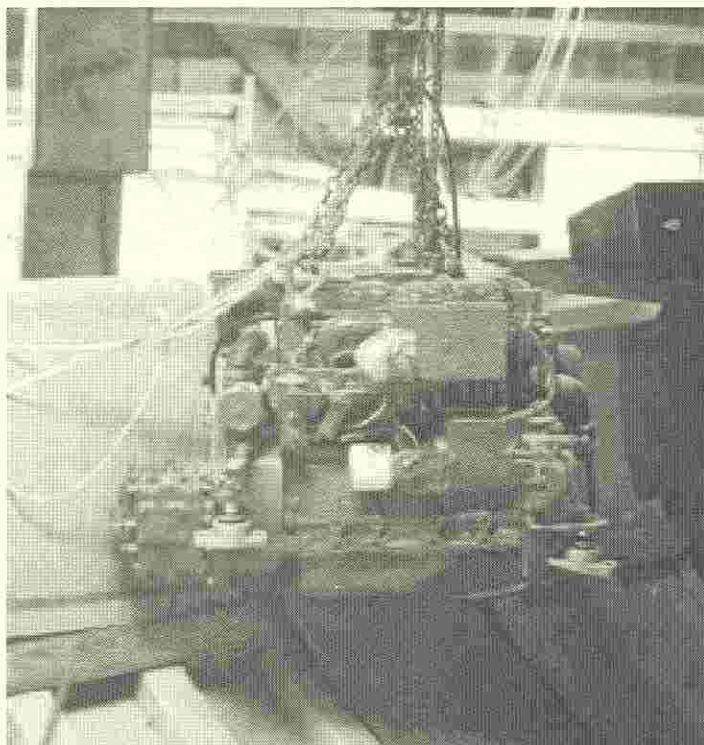


Figure 1. The Westerbeke 33 hp motor dangling inside the hull. Also visible are Elf's frames and a vertical leg of the improvised crane. (Photo by Brian McCandless)

During the winter of 2002 Graham Ero laid out the supporting frames for the motor. Greg Hanket and Brian McCandless assisted Rick in the construction of a crane over Elf for lifting and translating the 340 pound motor into Elf's hull. Uprights for the makeshift crane were constructed by bolting together overlapping 2" x 16" white oak boards to achieve the 12 foot vertical clearance required. The wood was grown, cut and milled on Rick's property. A donated transverse steel I-beam was mounted on top to carry the truck and winch assembly. The motor and transmission assembly hanging from the crane can be seen in the accompanying photograph, awaiting final installation (Figure 1).

Connecting the propeller shaft from the transmission to the propeller requires a sizeable hole in the boat for the "stern tube", to isolate the shaft from the boat's wooden hull. This 22 inch long tube will be sealed by a cutlass bearing bracket on the exterior and a packing gland on the interior. A heavy grease will be forced into the space between the tube and the wood after fitting the tube in place. A first-generation bronze stern tube was assembled by the Buck Algonquin company in Smyrna, Delaware, in 2002. To install this beast, a 2 inch diameter hole in Elf's black locust stern post was required. So, over the past year, many intense discussions were held to find a consensus on the correct procedure for drilling the mammoth hole. The experts queried in this matter finally decided upon the following overall procedure:

- 1) use the sternpost and keel to establish a run for drilling
- 2) decide the vertical pitch (12 degrees) and stern post elevation to fix the entry point
- 3) construct alignment jigs inside the hull for long drill bit shafts
- 4) drill a pilot hole from inside to outside
- 5) construct alignment jigs outside the hull to correct any pilot hole deviations
- 6) enlarge the pilot hole to final size and run.

Many nagging details needed to be figured out along the way, and the entire procedure hinged on the availability of hardware for the job. Three 3 drill bits were employed, each consisting of a bit welded to a shank extension. The pilot hole was made using a 7/8 inch twist drill lent by John Griffiths. Two bits were tested for the 2" diameter, one a 2 inch twist bit borrowed from the Sultana boatyard (Chestertown) and used to drill out her stern; the other fabricated by Jay Aigeltinger, consisting of a 2 inch forstner bit. Ultimately, the sharp cutting angle of the 2 inch twist bit caused it to bite too deeply into the pilot hole and jamming, transferring the torque through the shaft to the operator (Rick). The extended forstner bit allowed the cutting to proceed with more control.

The drilling process began during the week of July 28, 2003, with Graham and Rick laying out the inside guides and locating the entry point on the stern post knee (Figure 2). On the morning of August 2, 2003, a group assembled to help with the drilling: Rick Carrion, Graham Ero, Bill Sonntag, Brian McCandless, and Brian Smith. Throughout the day, phone calls were made to John

Griffiths. While Graham and Rick finalized the setup, Brian honed the cutting edge of the 7/8 bit and filing flats on the shank tenon to improve gripping by the chuck. Rick tested the drill on a blank of locust at the workbench (Figure 3). In setting up the drill jig, initial alignment was taken from the sternpost. However, slight twisting in that component resulted in considerable skewing when compared to the lay of the keel. Thus, a run was established that more-or-less followed the keel but took into account the slight twist of the sternpost. Graham cut a 2 inch entry hole and centering hole with a 2 inch hole saw, followed by chiseling to remove the kerf. Then, despite a little nervousness about the plan and about the end grain of the sternpost knee, the 7/8 inch pilot hole drilling began at 11:00, with Rick at the helm. To guide the progress, the drill shank rested on vee-block guides built by Graham and Rick, which were anchored to the hull frames (Figure 4). To steady the vertical run, Graham applied downward pressure on the rotating shaft with a hand-held board with a vee cut into its base. Things proceeded smoothly, with Rick taking 2 inch cuts and clearing the hole. But when the bit cleared the wood of the knee and entered the vertical sternpost, it grabbed and the 1 horsepower motor transferred all its torque to Rick who got his hand caught between the motor and the motor mount. To make things worse, the motor switch was jammed in the on position – in a flash, however, Rick ripped the power cord from the outlet. After that, Brian Smith was stationed on the power cord to unplug it in the event of any additional trouble.



Figure 2. Rick and Graham discussing alignment of drilling jig. Graham's right hand rests on one of the vee blocks. (Photo by Brian McCandless)

The pilot hole drill emerged from the stern of the boat at 1:00 PM and all present were delighted to see that the hole exited 1/2 inch off the predicted spot – sighting through the hole, one could see that the line ran true and pointed to the keel stem. The next challenge was to enlarge the hole...the 2 inch bit was readied and Graham used the portable steel stairway as a platform for the external guides, which were the internal guides moved out and re-blocked. As with the inside run, Graham used a 2 inch hole saw

to cut the 2 inch drill entry way, chiseling out the kerf for the bit. Within seconds of beginning the run with the 2 inch bit, Rick found it extremely difficult to control chattering of the drill against the ridges of the pilot hole, and the drill frequently jammed, causing the motor to torque uncontrollably. About this time, Jay Aigeltinger stopped in for the afternoon. A Variac voltage reducer was used to slow the drill speed, and the edges of the cutting teeth were honed at different angles to try to reduce biting, but after an agonizing couple of hours, only 4 inches of the run were excavated.



Figure 3. Rick performing a test boring at the work bench to test the bit and familiarize himself with the might of the Black and Decker drill. (Photo by Brian McCandless)

Worries about the motor over heating and continued lack of control forced the group to devise another plan. A short shank 2 inch forstner bit was located and the entire platform was moved out of the way for a test run. This was so successful that Jay agreed to weld the bit to a long shaft. On August 8, 2003, at 9:00 Rick and Graham reassembled the alignment jigs, this time attaching them with heavy clamps to the boat's exterior. Rick sharpened and honed the forstner bit and all its edge teeth for 2 hours. Drilling resumed at 11:30 AM, first with the pilot bit to widen the run along the now-visible center line, then with the 2 inch forstner bit. Along the way, the drill found a steel fastener on the port side – the bung was removed and the screw backed out. The procedure was repeated for a starboard fastener shortly thereafter. The job was completed at 11:57 AM, with the result of a dead-true hole for Elf's stern tube (Figure 5).

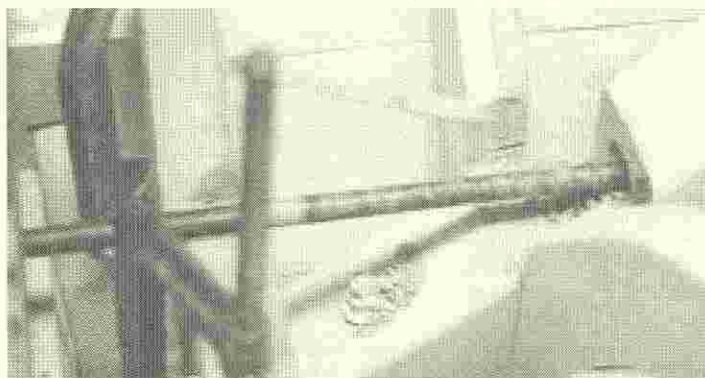


Figure 4. Boring the pilot hole, showing Elf's sternpost knee, the drill guide and the drill shaft. (Photo by Brian McCandless)

The principal challenge of this job was ensuring the accuracy of the run – with no way to see the result in progress. A pilot hole was therefore needed. A small pilot hole, less than one inch, would make drilling with the 2 inch twist bit straightforward, but flexure in such a small shaft might allow the pilot drill to wander. On the other hand, a large pilot hole drill tracks more accurately but makes it more difficult to enlarge the hole with a twist bit later. In the end, the use of a Forstner cutting bit gave the control required, much as a hand auger might have done in the century when Elf was constructed. With the completion of this job, the motor can be installed, the stern fittings can be fabricated, and the Guild is one big step closer to dancing a jig on Elf's foredeck.

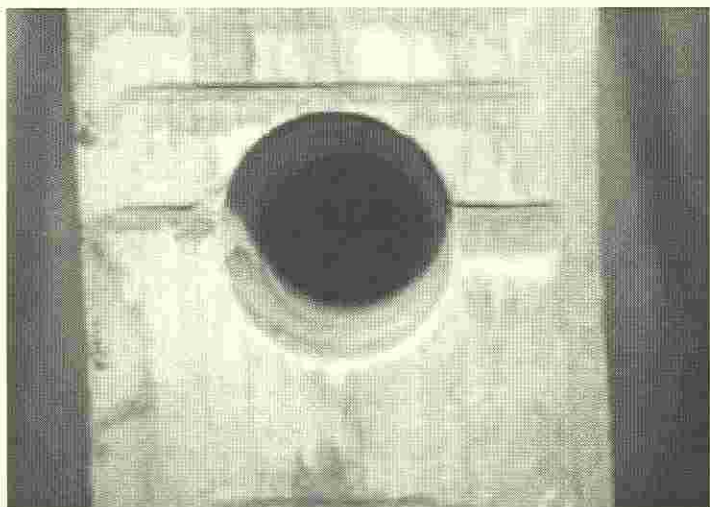


Figure 5. The completed hole. (Photo by Graham Ero)

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SHARE THE HELM WITH FRIENDS

We would be glad to send you future issues of our newsletter HELM electronically in pdf files. It would save us time and money and then you could post or forward it easily to friends. Please make a special request on the membership form and be sure to specify the E-mail address you want it sent to.

LETTERS TO THE EDITOR

We would like to hear from members for a potential letters column. Scuttlebutt is also invited. You could perhaps post interesting upcoming events. Please E-mail to me: elf1888@earthlink.net and CC to ray.zeigler@verizon.net.

Be sure to put CYRG HELM in the subject window.

BOOK ON ELF IN THE WORKS

We have a member that is starting to organize a rough draft of a book about ELF. It will include the history, the people who have owned and worked on her, and the restoration project. Now is the time to think back to some memorable moment you recall aboard ELF. Who knows? You may be published. So please send them to me soon and we may also publish them in the HELM.

21st Annual Crab Feast & BBQ

September 13, 2003

(Rain Date: September 20)

Cherry Grove Farm Beach Front
Veaseys Cove On the Bohemia River

I am very pleased to announce your invitation to our **21st annual crab feast - BBQ and day on the Bay**. For all who have attended one or more in the past, you know what a wonderful treat to expect. And to all the first-timers, prepare yourselves for a most memorable day on the Bay with many wonderful new friends.

We will host this year's event again at **Cherry Grove Farm's waterfront at Veaseys Cove**. We are very happy that the Ward family has graciously extended an invitation to enjoy their wonderful Bohemia River beach front.

Please bring your favorite dish to share, and please, please, please bring a copy of the recipe for our boater's cookbook. Be proud of your creation! We want to develop a cookbook of tasty, easy-to do recipes that everyone will crave. So give it your best shot and you will help with the success of the crab feast and the *Elf* restoration.

Also bring your favorite beach toy to share in between bites of crab and BBQ. **Musical instruments are also welcome.** Come by boat, by horse, by car, by helicopter, scooter, bicycle, or whatever, but please just come.

We plan to hold a silent auction. Please consider donating that unused treasure **to help raise funds for the restoration of *Elf*.**

For planning purposes, please let me know by **Monday, September 16**, that you and your family or friends plan to attend.

Cost this year will be \$30 (members) or \$45 (non-members).
Children Admitted Free.

This is a fund raising event for the *Elf* restoration project.

Please RSVP by September 7th:

Phone: 410-275-2819

E-Mail: elf1888@earthlink.net

Please mail your check ASAP to:

Classic Yacht Restoration Guild, Inc.
PO Box 237
Earleville, MD 21919

WORKSHOPS

We have many different projects that may be of interest to you. They provide active, hands-on learning opportunities and give the satisfaction of helping with the ELF restoration. Just to name a few of our current projects: glazing, painting, general wood-working, varnishing, and, yes the seemingly endless SAND-ING.

Please call ahead to announce your arrival: 410-275-2819
EMAIL: elf1888@earthlink.net

20th ANNUAL CYRG CRAB FEAST DIRECTIONS

From the North:

Take I 95 or US 40 to Elkton. Then take 213 South. Cross the second major bridge (Bohemia River). Take immediate right on Glebe Road, then see below*.

From the South:

Cross the Bay Bridge at US 50 & 301 split. Take 301 North for about 25 miles. Take left on Maryland 313 toward Galena (at yellow flasher). 313 becomes Maryland 213 North in Galena. Follow until just before Bohemia River Bridge (second major bridge). Take a left before bridge on Glebe Road.

* Follow Glebe Road for about 1.5 miles to Cherry Grove Road. Turn Right. Follow for about 1.7 miles and turn right again onto a dirt road. This will be marked for the Crab Feast. Follow straight for about 1.2 miles to the beach.

**Please drive slowly;
we will be guests on private property.**



THE HELM



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Earleville, MD 21919-0237